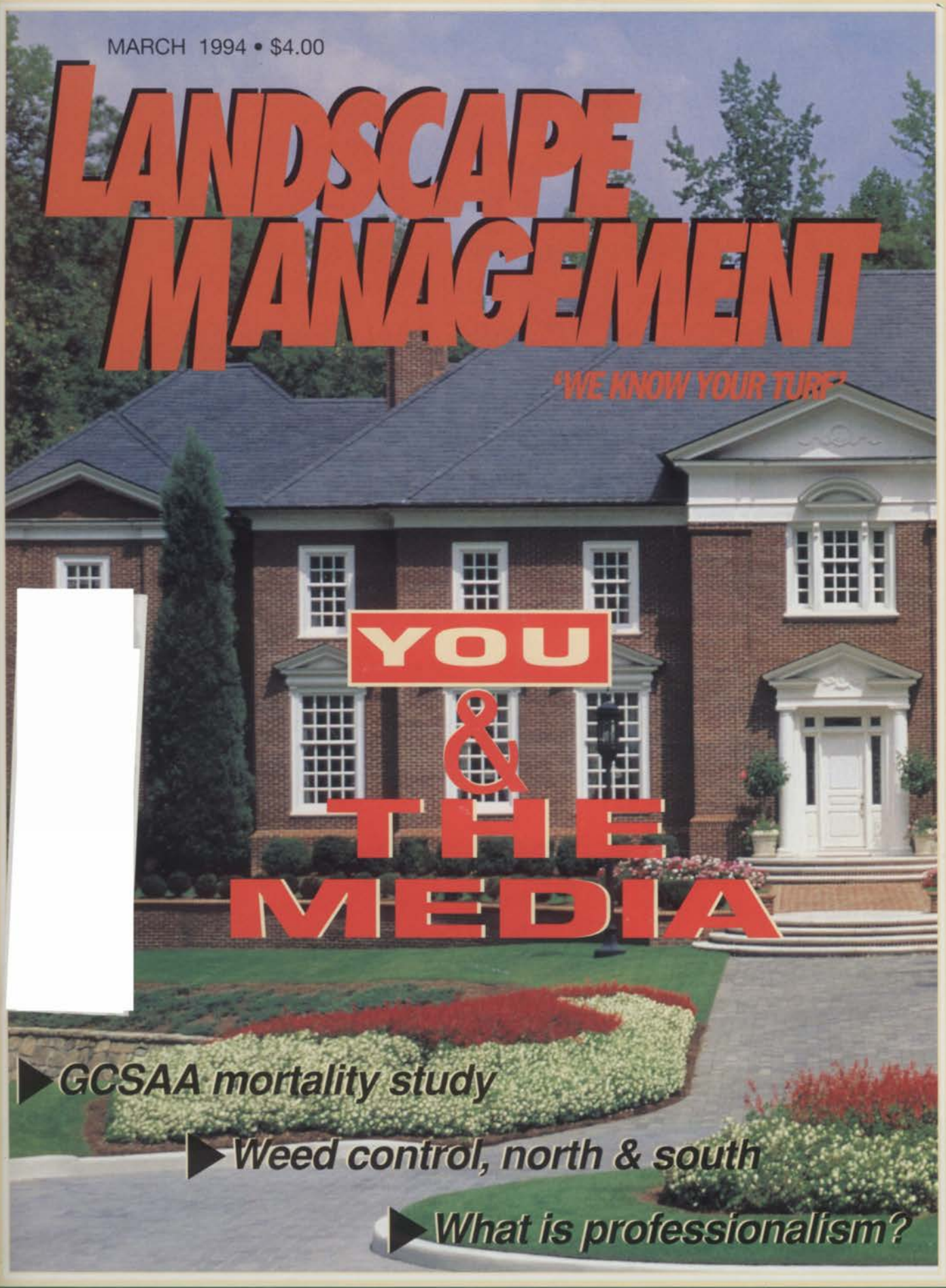
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AS WE SEE IT

JERRY ROCHE, EDITOR-IN-CHIEF

Results of mortality study are what you make of them

Sometimes, we, as editors, wish our magazines would appear each month, out of thin air, like they do in your mailboxes. But for us, they don't. Producing them is a painstaking process.

We sometimes wish we weren't forced to make difficult decisions like we had to make on page 72. The headline there, you'll note, reads: "Long-awaited mortality study released at golf show." It had originally read "Golf superintendents' death rate of cancer is higher than normal."

When we have a somewhat controversial story, we'll discuss it among ourselves, much like the editors of your local newspaper do with their stories of the day. In this case, one of us voiced some concern about the original headline being "too alarmist."

We do *not* want to be alarmist. We *do* want to report the facts as they were reported to the membership of the Golf Course Superintendents Association of America by Dr. Burton Kross.

His Iowa State University study compiled the reasons for the deaths of 618 former members of the GCSAA. It found that the incidence of certain cancers was abnormally high, compared to the general population.

Certainly, the research has holes in it, including the fact that statistics on personal habits—such as smoking, alcohol use and diet—and family medical histories were not studied. Neither is the study complete yet.

And certainly, cancer is a subject that is hard to pin down—not because we know that *everything* causes cancer, but because it's hard to *prove* that *anything* causes cancer. Even the tobacco lobby maintains that a cause-and-effect relationship between smoking and cancer has yet to be proven.

The kneejerk reaction is to point a finger at pesticides as a possible cause for these cancers. But that, quite frankly, is a totally unfounded premise.

Let's admit this much: in the early days of non-ag pesticide application (among superintendents and pest control operators), little was known about the compounds and less care was taken in handling them.

Many of the chemicals that were used in the past, like silvex, are now illegal. And many of the practices those old-timers used are now entirely outdated. I remember years ago, for instance, hearing one former applicator relate how he used to rub a certain herbicide all over his arms to keep mosquitos away.

Also gone are the somewhat lax tests performed on materials being handled by applicators in the '40s, '50s and '60s. We now have the EPA; we have testing equipment that can measure parts per trillion, and residue detection equipment like the blacklight system Dr. Kross himself showed superintendents in Dallas.

So where does that leave us? Here:

- The chemical manufacturers are working to supply us with new products that are much safer than earlier "generations" of products, and telling us how to safely apply them.
- The government is providing us with a system of checks and balances and actually legislating what materials we use, and how we safely apply them.
- The scientific community is investigating our history and providing us with some much-needed safety lessons.

How safe are the materials you are using? Before making that decision, you must evaluate all the information at your disposal, all the possible variables that could have entered into the Iowa State study.

But remember that any final decisions remain yours—and yours alone.

Jerry Roche

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MARCH 1994 VOL. 33, NO. 3

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Jerry Roche

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What's going on in Washington, D.C. this year, and how it will have an impact on your business? Here's what a number of legislators and lawn care operators had to say at the fifth annual 'Day on the Hill' sponsored by the PLCAA.

Ron Hall

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The EPA's Victor Kimm told lawn care operators that the Clinton administration wants a reduction in pesticide use. The LCOs didn't expect to find government officials asking them to use more chemical pesticides, so they weren't disappointed.

Ron Hall

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Golf course superintendents appear to have a higher mortality rate from certain cancers—particularly lung cancer—compared to the general population, according to a study conducted at the University of Iowa.

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On the cover: Begonias, salvias and geraniums decorate this residential landscape in Atlanta, Ga. Design, installation and maintenance by Post Landscape Services.

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st beautiful thing about ned in the top 1" of soil.

ASK THE EXPERT

DR. BALAKRISHNA RAO

Killing annual bluegrass

Problem: Is there a post-emergence herbicide to selectively remove annual bluegrass from desirable turfgrass in lawns? (North Carolina)

Solution: Annual bluegrass presents a serious weed problem in established turfgrass because of its prolific growth and seedhead production, shallow rooting, and poor drought tolerance.

Not many post-emergence herbicides are labelled for selectively removing annual bluegrass from desirable turf. Prograss from Nor-Am Chemical Co., however, is so labelled. According to the label, Prograss has both pre-emergence and early (two-leaf stage) post-emergence activity.

Prograss, an emulsifiable concentrate, is labelled to be used by professional applicators on ornamental turf only, and on home lawns by licensed or certified applicators only.

It is labelled for use on established perennial ryegrass, Kentucky bluegrass, creeping bentgrass, turf-type tall fescue, St. Augustinegrass and dormant bermudagrass. It is intended for professional use only on ornamental areas such as golf courses, parks, commercial landscapes and home lawns.

According to the label, Prograss application is most effective on healthy, actively-growing turfgrass. Some application tips:

- Avoid overlapping when treating turfgrass to prevent possible injury.
- A soil fertility test is recommended prior to treatment.
- Do not apply to zoysiagrass, hard fescue or fine fescue because it may cause severe injury.
- Be careful while using Prograss on overseeded and/or newly-seeded lawns.
- Read and follow label specificaions for additional details and recommendations.

On aquatic weed control

Problem: We have to manage small ponds in our clients' properties. We have a problem with managing floating weeds such as algae and duckweeds. How can we get rid of them? (Ohio)

Solution: The most common floating weed in Ohio is filamentous algae, also known as "moss" or "pond scum." It grows on the bottom of submerged vegetation and hair-like fibrous filaments float to the surface. The weed can cover a large area of the pond.

Most algae growth can be managed by using low concentrations of copper sulfate. General rate recommendation is 2.7 lbs. per acre-foot of water. If the pond water is very hard, higher rates would be beneficial.

For best results, dissolve the copper sulfate in water and treat the surface of the algal mat. Reports indicate that finely ground "Sno grade" or "instant" copper sulfate dissolves easily.

Remember that copper sulfate is corrosive to galvanized containers. The solution should be mixed in stainless steel, plastic or copper-lined containers.

Also, if the pond has too much algal growth (more than half of the total pond surface) and is treated, this may deplete oxygen and kill fish. The problem would be greater during hot and overcast weather. In this situation, it is better to treat half the pond area, wait for 10 to 14 days, and then treat the other half.

At the recommended rate, the copper sulfate is very diluted. If inactivated after 12 hours, it should not have any adverse effects on livestock. Do not apply copper sulfate when fish are spawning because it will kill the newly-hatched young fish.

To manage the duckweeds (*Lemna* sp.), apply herbicides such as Reward or Sonar. Measure the area to be treated and mix and apply these according to label directions.

Some aquatic herbicides also help manage certain algal species. It helps to first identify the weed species you have in the pond and then apply the right product.

Read and follow label specifications for better results.

No-herbicide weed control

Problem: We used to manage weed problems along highways using Roundup. Last year, we were told not to use any herbicides in these contracts. Any advice about managing weeds without using herbicides? (Victoria, Canada)

Solution: You might consider using Sharp Shooter, says Richard Rathgens, Davey's senior agronomist. Sharp Shooter is a potassium salt of saturated fatty acids from Mycogen Corp. It is a contact, non-selective herbicide. (I am not sure if this product is registered in Canada. Check with your Ministry of Environment.)

It is very difficult to selectively manage weeds without using the proper herbicides. An alternative approach would be to remove the weeds through cultivation and/or physically digging prior to flowering.

Another option is to encourage stands of desirable vegetation such as turfgrass or groundcovers to compete for the same space. Many broadleaf weeds have difficulty competing with properly-mowed turfgrasses.

Frequent site inspection and proper sanitation practices should help manage the problem along highways.

Another option is to eliminate the existing weeds, then overseed the thinned-out areas with desirable plant materials such as turfgrass, groundcovers or wildflowers. Provide good cultural practices to ensure their establisment and maintain density.

Another approach is to use natural mulch, black plastic sheets or fabric mulch around desirable plants. Even with this method, airborne weed seeds can contaminate the area, in which case mechanical hand-weeding may ultimately be needed.

Although desirable, there are no bio-herbicides on the market that can help manage weed problems. However, a number of scientists are working with a few candidate micro-organisms to manage such weeds in the future.

Dr. Balakrishna Rao is Manager of Research and Technical Development for the Davey Tree Co., Kent, Ohio.

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Circle No. 150 on Reader Inquiry Card

Professional journalists are not out to 'get' you

■ Friend or foe? Ally or enemy? They may help you or hurt you. Who is it? The media. You, however, have the ability to make an impact and possibly even direct the final outcome of a media encounter.

First, who is the media? A few years ago, they were as easy to spot as plantain in Kentucky bluegrass. If it were a broadcast (television) journalist, usually two people showed up, one lugging a big, heavy camera on his shoulder and the other a well-dressed man or woman carrying a microphone. Or a print journalist might be carrying a 35mm camera, a tape recorder and a notepad. They might even have had a press card if they were with the local newspaper or a staff writer for a national magazine. No more.

Over the past 10 to 15 years with the growth of computers and hand-held video cameras and the popularity of journalism as a profession, the media can now be almost anyone—including a student on the local school or university newspaper.

What's the big deal about that? Student journalists—or any journalist for that matter—can be persistent in their search for a "big" story. They want that byline even though it might mean sneaking up on you to find the next Super Fund site on your property.

But most professional journalists are not out to get you. This insight may be helpful to you the next time you are called for an interview or a camera crew or writer shows up at your office or job site.

While environmental concerns may not seem to be first on reporters' lists at the moment, what with health care reform and the problems in eastern Europe, they are not far from being brought back to the front burner.

So is it best to stall, hide or deal with the media in a straightforward manner? Here are some suggestions:

1) Develop a plan. Presume that at some point you are going to be interviewed by a reporter. A television reporter, of course, has the capacity to do you the most immediate harm or show you in the best light. Chances are very good that only 30 seconds of what you say—a "sound bite"—is going to be used.

Assistants and other employees should be included in the plan. Rather than letting one of them be interviewed—unless you have an articulate and knowledgable staff member and have already worked with the person on possible interview scenarios—it would be better to stress that they direct the media to you.

Remember, journalists are trained to ask probing questions and do not like taking no for an answer. But many of them are impartial and will work with you if at all possible.

What happens in an "ambush" situation? Be courteous, but tell the reporter that you are busy and ask them to come back at an agreed-upon time. If possible, find out what direction the interview will take; if not, be wary of granting the interview. You might also ask for time to collect your thoughts rather than getting antagonistic with someone who may be looking for a negative response.

2) Keep a file of the positive things you are doing. Then all you have to do is use the information as a guide. This does not have to be elaborate: just hand-written notes on scraps of paper, reminders of successful projects or new things the company has done.

3) Admit you don't know the answer. What if you are asked a question you don't have an answer to? Say so. If you can suggest someone else for the reporter to talk to (for example, an 800 customer service telephone number), be helpful.

Many times, an initial request from the media is for background. The journalist might just need help getting information, and chances are that you won't be quoted.

4) Go off-the-record. During an interview, if there is something you want to tell the reporter, but do not want included in any articles, ask the reporter to turn off the video camera or tape recorder. Usually, your request is respected.

5) Be yourself. An interview with the media can be positive. Be helpful if you can. The time you take with the journalist may turn into some great free advertising.

—The author, John Calsin, is a freelance writer with headquarters in West Chester, Pa.

and the media

Dos and Don'ts

DO:

...be pleasant
...say you're busy, if you are
...control the circumstances
...ask for questions in advance
...say you don't know, if you don't
...keep a folder of positive things

DON'T:

...be antagonistic
...abruptly leave
...be afraid to talk
...make threats
...be argumentative

—J.C.

Good public relations like 'fire prevention'

by Greg Petry and Renae Waier

■ Effective media relations involves consistent communication with the media that provides accurate information on your agency or programs, presented in a straightforward, professional and timely manner. Public relations is different than general journalism. You're practicing "fire prevention" rather than "fire fighting." Your concerns and the issues on which you focus should contribute to the overall goals and objectives of the organization. You should try to be proactive, generating information on the organization's health, rather than only reactive, responding to unfavorable reports—in effect applying a bandage to the wounds.

Your job, as a media contact for your organization, is to get information reported factually. You may be the initial contact who directs media personnel to the proper, pre-designated spokesperson for a specific story, or you may be that source. The spokesperson must be well versed on all aspects of the issue, the event, the organization—or have access to that information. Remember, reporters prefer to speak to the people in charge.

You and the news media form a team. You need them as a conduit to deliver information to those you wish to receive it. They need you as a source of supply for the information they wish (or need) to deliver. Properly handled, it's a win/win situation.

In general, media personnel do their best to get across the most factual information they have. It's a difficult job, and those who pursue it honestly and faithfully deserve our respect. If you provide these individuals with factual information they will report it the way they hear it.

News media outlets are business entities; they must make money to survive. They must supply what people want to read or what people want to see and hear in order to generate the income to stay in business. Within that framework, they provide the service of delivering inforrmation to their audiences.

Know what is news, what is "unpaid" advertising and what is "fluff." News merits attention. "Unpaid" advertising and fluff generally will receive the lowest priority. News items will have two or more of the following attributes: be of interest, be important, be timely, have the potential of making an impact on the audience.

News reports need to deliver essential information: who, what, when, where, why and how. Address these issues quickly, in the first two paragraphs of printed stories or in the first minutes of delivery of verbal information.

There are a few basics to grab the attention of most people: themselves, their safety, their money, their children, their fun, their daily routine, their beliefs, and other people.

For the media, determining what makes news is a balancing act that takes into account the interests of the audience and the interests of the businesss. The stories delivered in print or on the air are those which address the concerns of the largest portion of the audience it is hoped will consume it. If the "product" addresses audience concerns, they won't change the channel or put down the paper.

Get to know your media contacts: the reporters assigned to cover your "beat," or general area of news; the editors who work with those stories; and the on-air news anchors who present broadcast news to the audience. Meet these people. Let them know who you are and what you do for your organization. Leave your business card for their files. Then stay in frequent contact to keep the lines of communication open.

It's up to you to find out how these individuals think, what their attitude is about your general area of expertise (such as parks, recreation, athletic facilities, or turf and lawn care services). The media outlet may have an "official" position, which may or may not agree with the attitude of those you will directly deal with. Theoretically, this attitude should not matter; news should be delivered in a straightforward, factual manner. But people are human; organizational and personal attitudes do "slip into" news reporting. If you know the attitudes of the media outlet and what type of information they feel impacts the

continued on page 12

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Circle No. 144 on Reader Inquiry Card

. . . and the media

continued from page 9

concerns of their target audience, you can do a better job of delivering factual information in a form likely to attract attention and be used.

Find out the deadlines of each media outlet for the different types of information you may be providing. For example, coming events may need to be submitted one or two weeks prior to their occurrence; appointments or awards immediately following their presentation, or perhaps up to a week prior to the event so that on-site coverage can be arranged.

Then find out what format each media outlet prefers for receiving information. Written press releases may be issued by mail or by fax. Verbal information may be relayed by phone, in a personal visit or by pre-arranged interview. Black-and-white or color photos may be preferred to color slides or transparencies.

Be realistic in your expectations when presenting information to the media. Though an event may be a major part of your agenda, it may merit only a brief mention in the overall news of the day.

Ask for coverage; ask nicely; ask often. But don't be a pest, a complainer or one who cries wolf. Most media are flooded with information daily. Your item must not only stand out to grab the attention of media personnel, but must be ranked by them for its importance within the deluge of information received.

Be prepared for attention from the news media when problems occur; you are the established information source. Unfortunately, "if it bleeds, it leads," is a concept often followed by both print and broadcast media. Don't try to avoid media contact at these times. Supply pertinent, factual, accurate information, including any positive aspects of your organization's role in the problem. Anticipate questions and be prepared with well thought-out answers. Monitor the situation and the media's reaction to it. Expect fair and factual reporting. Seek corrections of any inaccurate reporting.

Take advantage of slow news times. Become a source of information to fill in the blank spaces during weekends, post-holiday days, summer months, winter months, school vacation breaks or whenever local media are actively seeking stories. This may be your best opportunity to get across positive "feel-good" information, as long as it is newsworthy.

Keep track of news that is used. Clip newspaper articles. Record radio and television news broadcasts. Compare this coverage to the information you submitted. Note which information is, and is not, used in these media reports; which information isn't covered at all.

Follow up with your media contacts. Was the information in the right form? Was it on time? Do they need more details, or fewer? Refine your own information-gathering and dispersal process to give them what they want and need.

You and the media can make a winning team. But, as with all team efforts, it does take work.

—Greg Petry is superintendent of parks for the Waukegan (Ill.) Park District and president of the national Sports Turf Managers Association. Renae Waier is marketing and community relations coordinator for the Waukegan Park District.

BANG THE DRUM SLOWLY...

■ When an interview with a journalist starts, you should first remember to speak slo-o-o-owly, according to Karen Cronin and Paul Lancaster of Virginia Tech. "The print media reporter will be writing furiously as you speak and will probably not know shorthand," they say. "You want to make sure you are quoted accurately, and speaking slowly may also help you stay calm."

If you are being interviewed by a television or radio reporter, you should also remember to speak very slowly, but somewhat energetically. You'll be surprised how natural it sounds when you hear it.

The pair also suggests "no hostile answers for hostile quotes" and these tips about your gestures, facial expressions and posture when appearing on television:

- Sit straight, lean slightly toward your host.
- Maintain eye contact with the interviewer, not the camera.
- Don't shift eyes from point to point.
- Smile, unless you're discussing a very serious topic.
- Gesture frequently, using natural hand movements, but avoid hitting the microphone.
- Remove everything from your pockets, just in case.
- Don't swivel, rock or shift position in your chair, if sitting. If standing, don't shift weight from foot to foot or rock forward and back.
- Be cautious about nodding to indicate understanding of the question; it may signal agreement with a point you don't hold.
- Let your enthusiasm about your topic show on your face.
- Keep your head up, breathe deeply and demonstrate controlled energy in your demeanor.

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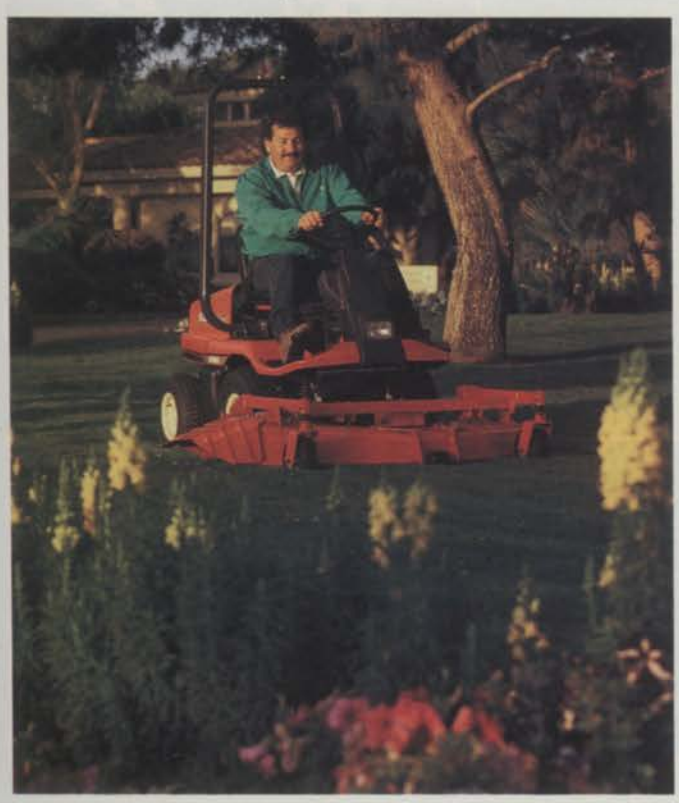
Equipped with an 18-horsepower, liquid-cooled diesel engine, the GF1800E offers a choice of three shaft-driven, off-set mowers – 48" mulching rear discharge mower, 54" side discharge and 60" side discharge. The three mower decks feature a cutting height from 1"– 4". The GF1800E has a hydraulic brake, clutch and lift system.



The sophisticated hydrostatic transmission features a single pedal to manipulate both speed and direction, eliminating shifting and clutching. Front-wheel traction, differential lock and rear-wheel steering for tight turns lets you work efficiently on all types of grass without turf damage.

A 3-cylinder engine, "speed set control" hour meter, full-tilt steering wheel, one-touch seat adjustment, semi-flat deck and reverse air system are standard.

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Circle No. 125 on Reader Inquiry Card

LM REPORTS

Aerifiers for every application

■ Turf managers worthy of their title can tick off these benefits of regular aerification:

- relieves soil compaction,
- decreases thatch, and
- allows nutrients, air and water to reach turfgrass roots.

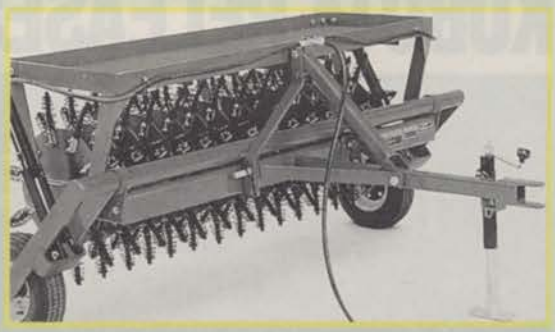
Now, the tough question: how many manufacturers of turf aerifiers can you name? If you can list only a half dozen or so, you're in for a real surprise when you look over the following chart, the most complete yet to appear in a turf magazine, we believe.

There are green aerifiers, red ones, orange ones. Some you walk behind, some you ride, some you pull with a tractor. There are huge ones that can aerate golf course fairways as quickly as your neighbor can mow his lawn. There are small ones that you can almost turn on a dime.

There are also choices to be made in the types and action of the tines, and the design and weight of the machines themselves. Some of the aerifiers pull cores, some jab steel prongs into the earth and fracture the soil.

Indeed, the most difficult task you may have is finding exactly the right machine for your turfgrass care needs. More than likely, that machine is available. Start your search on the following pages.

—Ron Hall



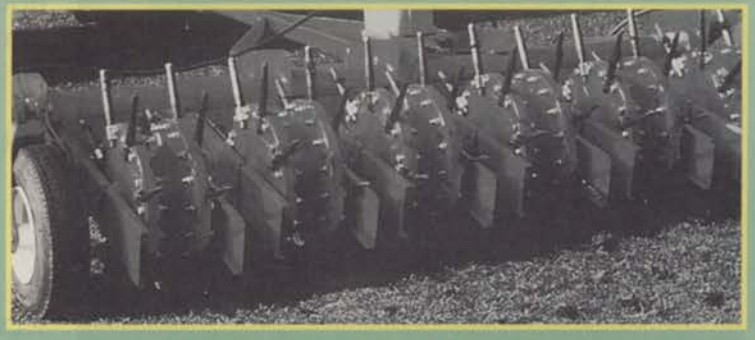
Aerify a normal fairway in 30 minutes with this John Deere unit.

Greencare International's Coremaster penetrates turf to more than six inches.

Verti-Drain from Emrex, Inc. aerifies more than 21,000 sq. ft./hr.

Turf Conditioners from Yeager-Twose have optional blade attachments.

Toro models include out-front attachments for Toro tractors, and three tractor-drawn aerators.



Jacobsen Aero Kings can handle up to 48 acres in a day's work.

TURFGRASS AERATORS

Company	Model	Features
Bannerman Circle No. 311	Super-Ject 600	4' or 6' wide, shatter tines or fine tines.
Beefco, Inc. Circle No. 312	Green-Rite III	One-pass over-seeder aerator, 58" working width, for small tractors 18-40 hp.
Bunton Circle No. 313	large area cultivators	Several models, working widths 37"-79", depths 3"-9"; tractor-mounted, Cat. 1, 3-pt hitch.
Emrex, Inc. Circle No. 314	Verti-Drain	5 models from walk-behind with 6" penetration and 24" working width to Model 305.250H working width of 98" and penetration of 16". Aerates 21,500 sq. ft./hr.
F. D. Kees Circle No.315	Core Plugger	Aerates up to 17,200 sq. ft./hr. 5 h.p. engine. 16" swath width, flip-up hood. Foot-operated adjustment controls.
Feldmann Engineering Circle No. 316	TurfVents	6 models, all plug aerators. Swaths from 32" to 64". Tines penetrate up to 2½", 54 vents per square yard, all models with weight trays.
First Products Circle No. 317	Aera-vator	60" and 80" models. As rotors roll, PTO powers tines to vibrate in burrowing motion to penetrate and fracture harder soils.
Floyd McKay Circle No. 318	Deep Drill Aerofier	No separate tractor required. Kubota diesel 19 hp engine. Drill depth adjustable to 10". Designed for use on greens. Penetrates hard pan. Green healing time 2-4 days.
Gandy Circle No. 319	aerator attachment	Aerator option that quickly clamps around Gandy's 18x24" roller drum.
Greencare Int'l. Circle No. 320	Coremaster 6/150	2" to 6¼" penetration, roller bearing crankshaft with sealed bearings, steel aeration head and heavy-duty steel frame.
Hahn Circle No. 321	TM-140, TB-140	TM-140 for fairways, athletic fields, and industrial lawns. Attaches to any tractor with Cat. 1 3-point hitch to cultivate full 6-ft. swath. Weight rack holds up to 1000 lbs.
Hoffco Circle No. 322	aerator attachment	Option for Li'l Hoe and Big Li'l Hoe cultivators.
Holland Equipment Ltd. Circle No. 323	Aerway	Large-area aerators, rugged frame design, rollers ground driven, up to 8" penetration, cultivating-action tine design.
Jacobsen Circle No. 324	Aero King 9672/6448	For large turf areas fast. 4-6' widths. Aerate up to 48 acres per day. #9672 has 6' width, Model 6448 a 4' width. Aero Kings are easily towed behind any tractor with 20 or more hp with either a universal or 3-pt. hitch.
John Deere Circle No. 325	280S, 270	280S shatter-tine, 80" width can finish normal fairway in 30 minutes. Four adjustment positions 6'-wide 270 for core aeration with open or closed spoons.
Lesco Circle No. 326	Aerator-30	For lawn service companies, 5 hp B&S, large curved handles for maneuverability. Extra shielding on back of machine for operator protection, aerating width 28".

more on page 16

AERATORS *from page 15*

Millcreek **Circle No. 327**	**420, 630, 840**	Front mount for Hustler, Ford, Deere & Kubota commercial mowers. Model 420 is 42" wide, Model 630 is 63" and Model 840 is 84". Choice of standard ¾-inch or optional ½-inch spoon sizes. Top weight rack.
Multi-Core-USA **Circle No. 328**	**Multi-Core**	Made in Australia. From walk-behind to tractor-mounted units. Working widths from 16" to 60", penetration up to 5" on Models TM 1000, 1500.
Newlon Bowls **Circle No. 329**	**Drillcore**	Made in Australia. Tru-Putt Golf Green Drillcore, drilling depths of 1"-4", patented core bit leaves clean, soft hole.
Ransomes Ryan **Circle No. 330**	**many models**	DGA 30-06 (deep greens riding aerator) provides a 30" width and variable spacing. Aerating depths from 4"-6" in ½" increments with adjustments made from operator's seat. 33 hp engine. Hydraulic drive. Three type of tines available. Lawnaire aerators for residential lawns and Tracaire line for fairways, fields and other large areas.
Sisis **Cirde No. 331**	**tractor-mounted**	Made in Europe. Wide slitting aerators for golf fairways, athletic fields, other large turf areas. Interchangeable tines.
Southern Green, Inc. **Circle No. 332**	**The Soil Reliever**	Model 60, 60" working width, 16" depth; Model 80, 80" width, 16" depth. Even hole spacing with variety of tines.
Steiner Turf **Circle Co. 333**	**AR 140**	Front-mount hitch attach; 5" tines, 40" working width. AR 140 features ground-driven shaft with greaseable bearings. Down pressure from tractor's front lift increases penetration.
Terracare Products **Circle No. 334**	**4 Terra models**	Walk-R-ide II: 8 hp, aerating width 18", three speeds forward, one reverse, 35,000 sq. ft. per hour, penetration 2¾". Terra 98: aerating width 22", pull with 12 hp tractor. Terra 200: aerating width 3', for athletic fields, golf courses. Terra 320, aerating width 5'.
Toro **Circle No. 335**	**many models**	Greens Aerator, 16 hp Kohler engine, 13,000 sq. ft./hr. Remove and replace tines in less than 5 minutes, hydraulic lift lever for coring unit. Also Fairway Aerator, Aerator 75 for use as out-front attachment to Toro tractors, and three tractor-drawn aerators for general turf areas.
Turfco Mfg. Inc. **Circle No. 336**	**The Aerator**	¾" tines penetrating 2¾" deep. Aerate up to 10 average lawns per day. Aeration width 20". Wide drum in front makes turning easy.
Turfster International **Circle No. 337**	**Turfster/Dedoes**	Most popular aerator is drum version (3 models), pick up cores at time of aerating. Model J designed for extra strength. Open spoon tines also available for this unit hinged tine that pivots, allowing clean removal of plugs from tines.
Worksaver, Inc. **Circle No.338**	**four models**	Available with pull-type hitch or with Category 0 or 1 (3-pt. hitch), welded spikes, herringbone pattern.
Yeager-Twose Equip. **Circle No. 339**	**TC 10 & TC 11**	Turf conditioners, one-pass operation, suitable for majority tractors from 35 hp. 7 blades, working width 70". Optional blades available; vibrating blade and 'bullet' break up under-surface compaction, TC-11 compact model, width 18".

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Circle No. 147 on Reader Inquiry Card

What is PROFESSIONALISM?

'Look the part, act the part, and then charge the part,' one landscaper says. There are many other opinions, though.

■ Many companies in the lawn and landscape industry aren't even professional enough to know they're not professional, say those on the other side of the fence.

Ask any well-known businessman and you'll hear "horror stories" about the unprofessional and "low-balling" competition they confront on an everyday basis.

"The first problem with professionalism in this industry," one landscaper tells LANDSCAPE MANAGEMENT, "is that there isn't any. When you say landscaper to somebody, the first thing they think of is somebody with a pickup and a mower. Education is part of the problem. Historically, it's been a lesser educated person who didn't understand the ramifications of being in business."

According to Jack Robertson of Robertson Lawn Care, Springfield, Ill., it's mandatory that smaller companies be professional. "The smaller company that says it can't afford to be professional is admitting a lack of professionalism," he notes. "The scapegoat is pure cost. But how can you afford *not* to be professional?"

For the record, here are some keys to professionalism, and their sources:

● "Professionalism is doing a job better than the customer could ever expect. The difference is knowing more and being able to produce at a higher level." *(Russ Adsit, Adsit Landscape & Design, Nashville, Tenn.)*

● "Professionalism is employee education, keeping up with government regulations, knowing your costs, knowing enough to ask for outside help, being properly insured, knowing the safety and environmental aspects of the job. And it's taking responsibility to communicate to the customer what professionalism is." *(Arnie Sieg, The Bruce Company, Racine, Wisc.)*

● "Professionalism connotes a high level of commitment to your clients, to the industry, and to keeping yourself knowledgeable and skilled in the latest technology and developments. A professional is sensitive about, and committed to, projecting a positive public image at all times...and to treating his co-workers and associates with respect. A professional is ready and willing to share ideas and information to promote the industry." *(Mike Frank, David J. Frank Landscaping, Germantown, Wisc.)*

Adsit: Do a better job than they would ever expect.

Fogarty: 'High value' is not always equal to high quality.

'Low-ballers'—For some reason, the question of professionalism always seems to come back to those "low-ballers" undercutting prices on the true professionals. These companies are in business for a mere blink of an eyelash, then go out of business so others can quickly replace them.

"Not all customers are only concerned with the lowest price," notes Larry Wright, president of the Metropolitan Detroit (Mich.) Landscape Association. "But unless you prove to them that you are more professional than the low-ballers, they may not have any other choice than to use price as the determining factor."

And low price-quoting is not limited to the smaller companies, says Phil Fogarty of Crowley Lawn Care, Cleveland.

"Some of the bigger companies are not striving for quality lawn care any more," he says. "They're just calling it 'high value.' That makes me nervous because it can really hurt the overall image of the industry.

"If we don't get back to TQM models then, as a whole, our industry will even get worse as far as professionalism. Some trends are going in the wrong direction.

"Low price has never made a great company yet."

continued on page 22

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FOR PROFESSIONALS

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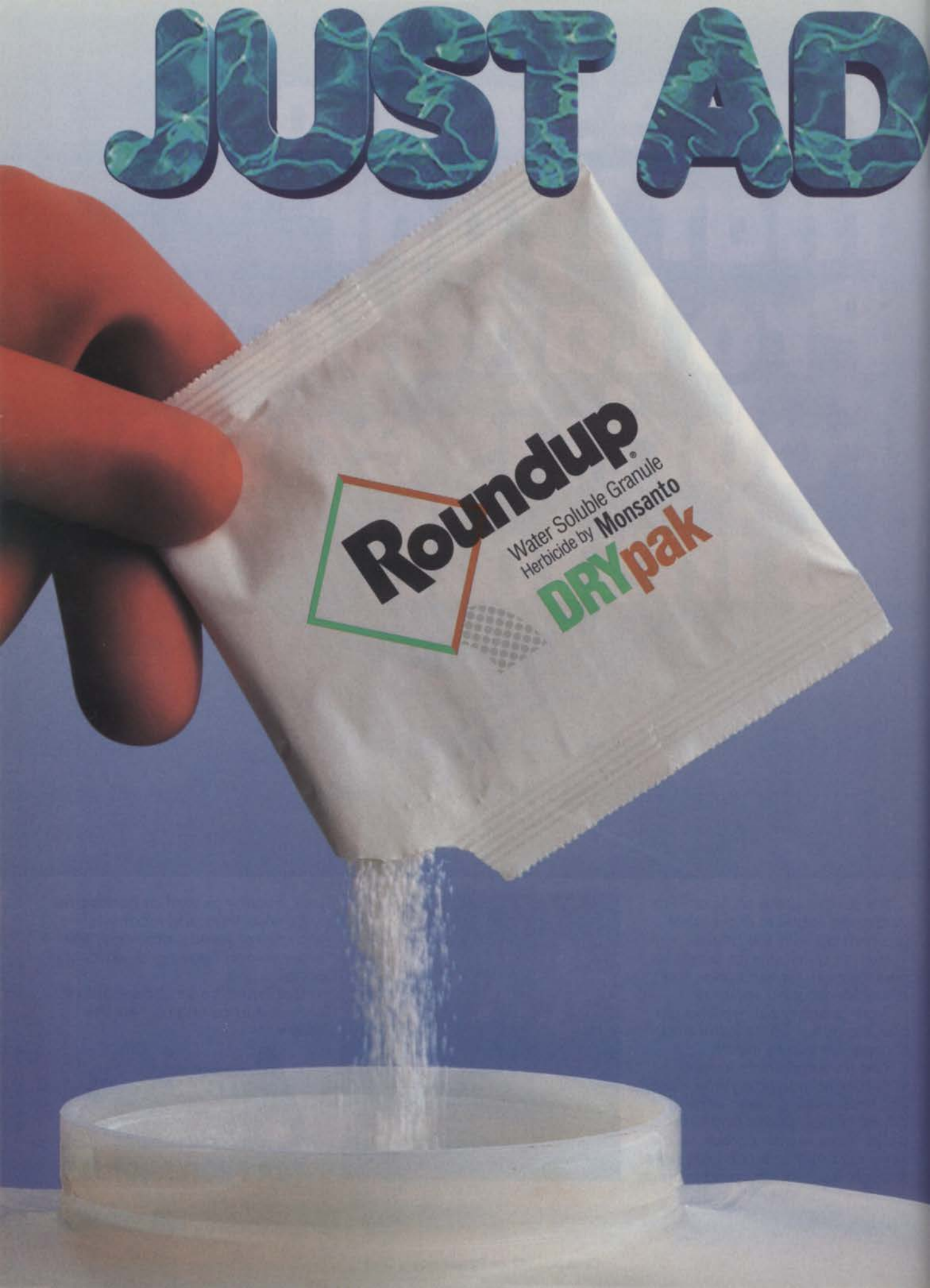
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Circle No. 135 on Reader Inquiry Card

Here's a list

■ Larry Wright, president of the Metropolitan Detroit (Mich.) Landscape Association, lists these professionalism prerequisites:

1) Courteous, knowledgeable employees, neatly groomed and in uniforms;
2) Clean, professionally lettered vehicles with association decals on them;
3) Good employee work habits;
4) Professional office staff;
5) Courteous and helpful phone habits; and
6) Limited use of answering machines during normal business hours.

—*J.R.*

continued from page 18

Stephen M. Pollan, in his book "The Field Guide to Starting a Business," had some interesting thoughts on pricing.

"It is a double-edged sword," Pollan wrote. "It's one of the most complicated issues facing the entrepreneur."

Prices should reflect what the potential customer believes to be the value of your service, first and foremost, according to Pollan. Larger businesses have lower production costs and can take advantage of volume discounts. Established businesses, therefore, should be able to sell at lower prices than smaller businesses.

Sieg: Professionals educate employees, follow regulations.

"Entrepreneurs who provide a service," Pollan continues, "may feel their lack of experience forces them to charge lower prices. But undercharging does more harm than good. If you set your price too low, customers may believe that what you are offering isn't as valuable as what the competition offers.

"Believing that selling for less will bring success quickly can be fatal."

Image the key—Jerry W. Roberts, writing in *North Carolina Turfgrass*, believes, correctly, that image is the key. Roberts owns Roberts Management Consultants, Ft. Worth, Texas.

"Businesses have similar commodities and clientele," Roberts writes, "but they do not leave the same impression. These mental pictures are images. History establishes a reputation, but present actions determine an image.

"Creating a positive and impressive image for your business involves several ingredients:

"**Innovation**: the willingness and inclination to explore new avenues, different products and contemporary techniques.

"**Direction and pace setting**: the appearance of your facilities, employees and their equipment, the appearance of the mail that leaves your office, telephone operators trained to take care of customers.

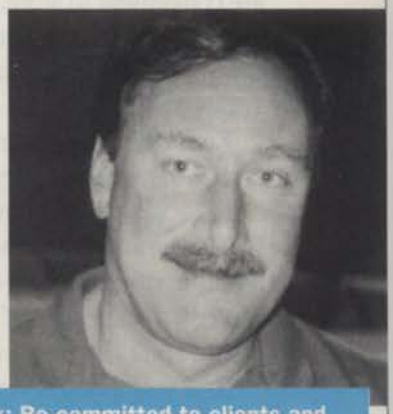
"**Advertising**: a steady low cost program of advertising using (various) media.

"**Steady growth**: a balanced approach to steady growth allows management and employees to mature with responsibility and still project a positive growth image.

"**Single-mindedness**: Ethics, using honesty, integrity and communication when dealing with customers."

Finally, the key, our anonymous landscaping friend says: "You've got to look and act the part, and then charge the part."

—*Jerry Roche*



Frank: Be committed to clients and industry.

WANTED: ILLEGAL LANDSCAPERS

■ Eight unlicensed California landscapers were set up, caught and arrested last fall in Walnut Creek when the California Landscape Contractors Association and the Contractors State License Board combined forces during an undercover "sting" operation.

"More than $400 million was lost in tax revenues between 1990 and 1991," said CLCA Licensing Committee chairman Richard Cohen. "The loss total could be significantly higher today, considering the apparent upsurge in illegal construction activity the past couple of years. Rather than going toward the state budget, the money's going into the pockets of unlicensed operators like the eight arrested the other day.

"Everyone suffers: consumers because they have virtually no recourse against poor workmanship or failure to complete the job; licensed contractors because of unfair competition.

"These days," Cohen continued, "it's a disadvantage to be a professional. But fortunately, the state board wants unlicensed operators to become part of a legitimate, tax-paying society. So CLCA and the Contractors State Licensing Board are joining forces to set up sting operations against individuals performing landscape work without a license."

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Circle No. 155 on Reader Inquiry Card

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05-0517-037

BEFORE you buy...

Questions to ask yourself before getting out your wallet this spring.

■ **Is the equipment I own really worn out?**

There's no reason to replace a truck, tractor or mower that works well—but it also isn't smart to squeeze a few more months of service from a machine that is slow and inefficient. It can also break down when needed the most.

Is it perfectly good, but shabby?

If so, consider a replacement seriously because of the impression such an unattractive-looking mower, power vac or other essential landscaping equipment will make on customers and employees. They'll feel that they're getting a professional job when shiny new and professional-looking equipment is used. Employees appreciate the prestige of using new equipment.

Can it do the landscaping work I need easily and efficiently?

The sprayer you own, for example, doesn't easily spray weeds, trees or ornamentals. But you only need it for lawns—and it does this work well. So why buy a new sprayer?

But if you're planning for future business growth, you'll probably require a more versatile model since you'll use it more frequently and for many different types of work that you may not do now. Thus, you might outgrow your present sprayer's usefulness, won't have the necessary versatility, carrying capacity or speed to meet your new workload.

How high is the quality and how good is the design of the unit I plan to purchase?

If it's cheaply built and poorly designed, you won't get a good payback, and downtime for repairs will chase away customers, profits and employees, warns Robert R. Riley, president of Green Pro Cooperative Services in Hempstead, N.Y.

Companies that purchase quality equipment are generally more successful, he notes, because they can take on more work faster and attract more new customers.

Will it considerably reduce present labor costs by requiring fewer employees or taking less time?

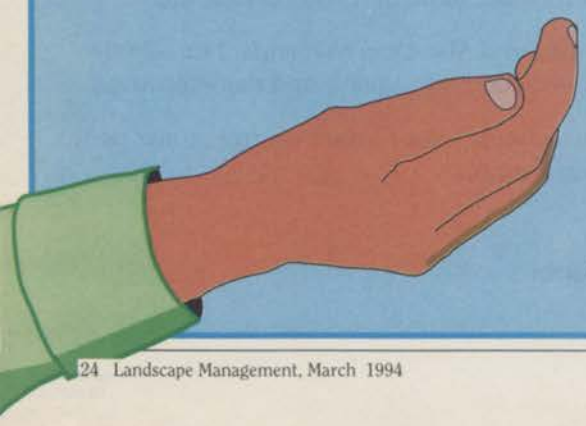
A latest model all-terrain slicer/seeder, for example, which maneuvers easily around flower beds, hills and most other terrains, can be well worth its price. It will also be a real bargain since it can be used repeatedly for free after it's purchased, excepting for minimal operating costs. Employee salaries, on the contrary, must be paid regardless of how efficiently they do (or don't) work.

—Bess Ritter May, the author of this article, is a freelance writer who is based in Philadelphia.

SEVEN MORE QUESTIONS

1) Does it have safety features that will reduce accidents?
2) Are replacement parts available locally at reasonable cost?
3) Can additional parts be ordered later to prevent the new machine from becoming obsolete too quickly?
4) Will I use it often enough to justify its purchase?
5) Does the manufacturer offer acceptable guarantees and warrantees?
6) Can the company supply testimonials from satisfied users?
7) Will the machine be featured or demonstrated at an upcoming trade show where I can observe it in action?

—B.R.M.



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daily	34%
weekly	31%
monthly	18%
none	17%

● How do you service equipment when necessary? Of the respondents to the Toro survey, 49 percent keep service technicians on the payroll. The remainder depend on either commercial service dealers or distributor service departments.

—B.R.M.

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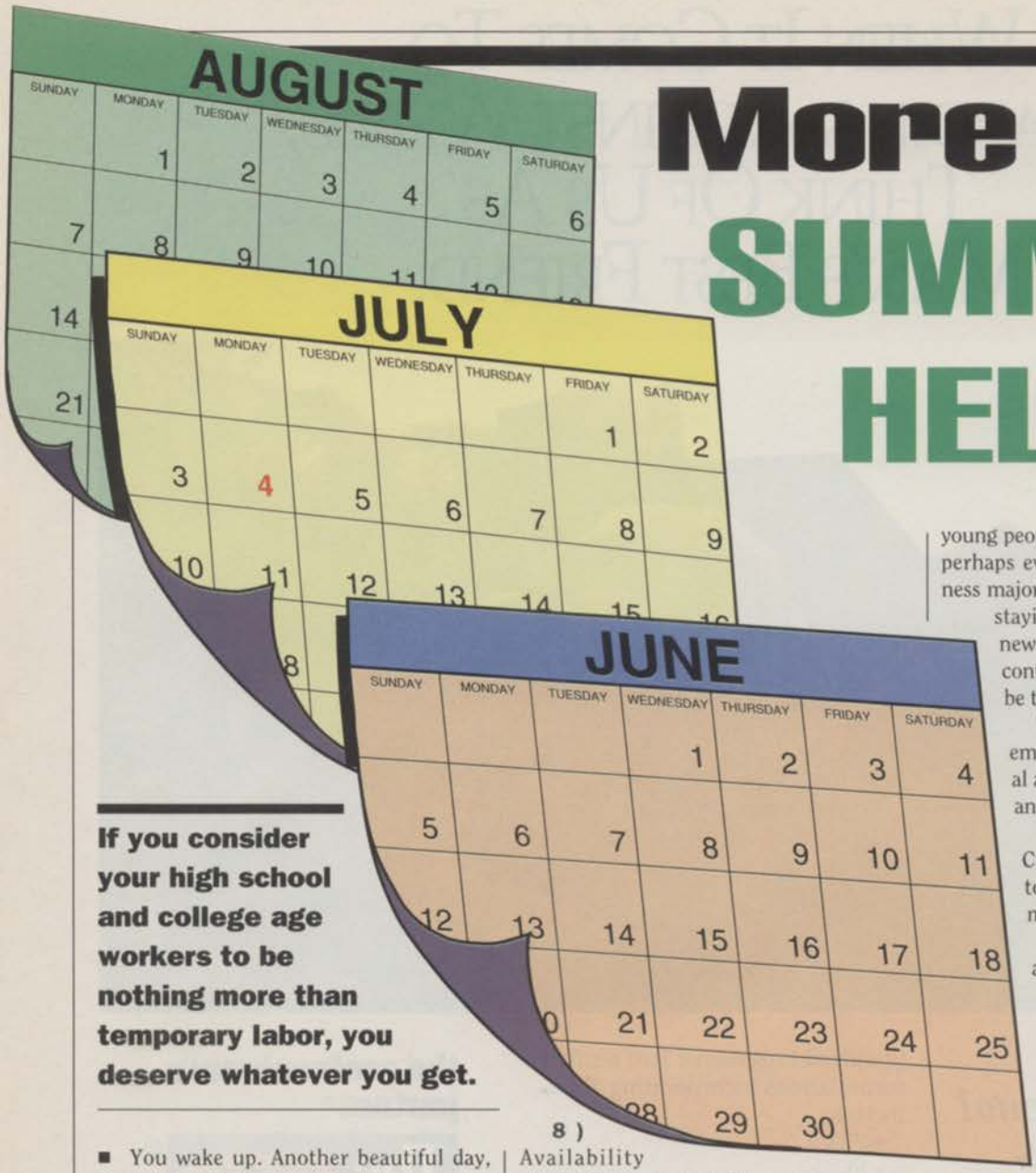
AUGUST
SUNDAY MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY
JULY
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JUNE
SUNDAY MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY

More than SUMMER HELP

If you consider your high school and college age workers to be nothing more than temporary labor, you deserve whatever you get.

■ You wake up. Another beautiful day, great to be alive!

Then it hits you. Today you begin interviews for "summer help!" Three months of screw ups and sick days! Your business is ruined!

Relax. If you've given yourself enough time, know how to interview, know what to look for, and how to sell the job, you'll hire the best summer help.

Pia Curry, owner of The Hiring Assistant, Dallas, Texas, says employers commit 10 common errors during the screening and selection processes:

1) Important information is missed.

2) Applicant data is misinterpreted.

3) Biases and stereotypes affect judgements.

4) One candidate characteristic overly influences judgement.

5) Decisions are made in haste.

6) Decisions are not systematic.

7) Pressure to meet quotas affects judgements.

8) Availability of candidates affects judgements.

9) The position and organization are not accurately depicted.

10) Good candidates for other openings are overlooked.

"The golden rule of screening and selection," says Curry, "is that past behavior and performance is the best predictor of future behavior and performance."

Behavior, according to Curry, is "an action or reaction in a specific situation, with a known result." Behavior is *not:*

- what a person would like to do;
- what a person thinks should be done, or
- what a person should have done.

It's important to consider what these young people have to offer to the company, perhaps even beyond graduation. A business major in his final year might consider staying on in the fall, perhaps in a new marketing position. If he's not continuing on to college, this could be the career start he's looking for.

You want the best—The best employees are dependable, punctual and show some signs of integrity and reliability.

To keep these people, says Curry, show them what you have to offer. Let them know they're more than just "summer help."

"Give them a feeling of being a part of the company, and try to learn if they posssess other skills that can benefit the company, such as customer service skills or other customer interaction talents," Curry says.

If you find yourself interviewing a student with no past work experience, ask him about his responsibilities at home. What's his attitude about work in general? What has he learned about mowing the lawn at home? How does he feel about getting a job done ahead of time?

Past behavior and performance is the best predictor of future behavior and performance.

There are a lot of summer jobs out there, waiting for eager youth, says Curry, and they should have a reason to come to work for you.

Curry's company, The Hiring Assistant, was recently awarded an "Innovation in the Workplace" award by the Dallas Chamber of Commerce for its automated job screening process.

—Terry McIver

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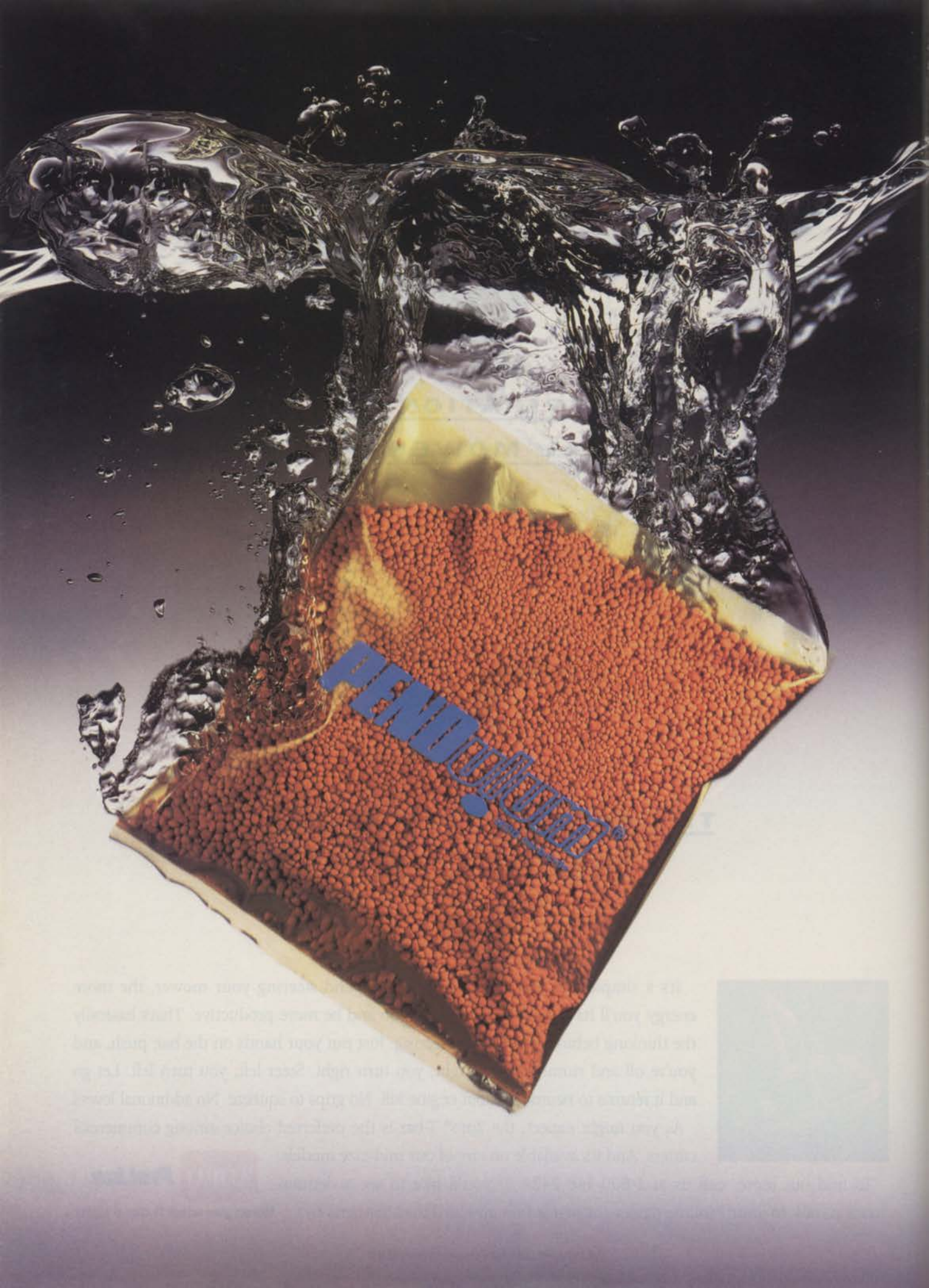
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THE ACCOUNTING PROCESS: A SIMPLE RECORDING OF TRANSACTIONS

by Dan Sautner
Padgett Business Services

■ Accounting systems are designed to control a company's financial transactions. They change with the organization's size and age.

If you are already in business, you should have at least a simple accounting system set up. But as your business grows, so should it. The simple system presented here can be accomplished in a few minutes each day.

The basics—Any business should have a separate company bank account. To try to run your business out of your personal checking account is often dangerous. At some point, you or someone else will be required to separate the information. This can be a long and involved process.

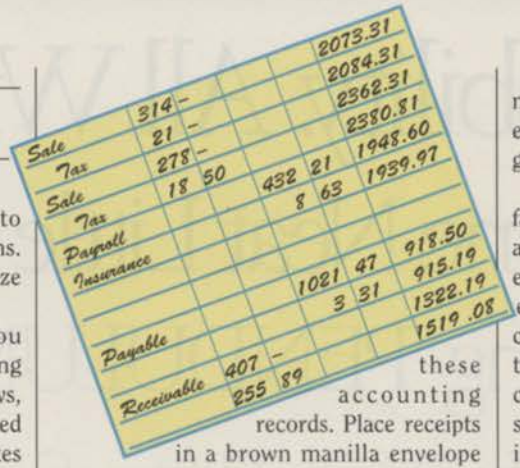
Record every transaction involving a bank deposit or withdrawal, and what each transaction is and why you made it. Dates, amounts, and with whom the transaction was made are also important. Cross reference every invoice and payment to the check number, and maintain these slips in a file by check number. The more description, the better.

As a minimum, you should be able to determine the amount of each transaction and the amount of the sales tax collected. At the end of the day, you should record information on a simple columnar sheet of paper called the monthly sales journal. it should have at least five columns: gross cash collected, sales, sales tax, cash payments (made straight out of the till for miscellaneous expenses), and bank deposits.

Now for a simple cross-check. Sales plus sales tax will equal gross cash collected, will equal bank deposits plus cash payouts. Balance these five columns each day, and total them at month's end. You may consider a sixth column, which would be used for the differences in till count, commonly called cash-over/short.

Using this simple recording method, along with your check stubs and monthly bank statement, will give you the very basics of an accounting system.

All of your source documents (receipts, invoices, etc.) are the back-up support for



these accounting records. Place receipts in a brown manilla envelope for each month. Keep your cash paid-outs in a separate file. Finally, collect and organize your complete bank statement (cancelled checks included) in an envelope clearly marked with the appropriate date. This takes care of your paperwork.

The first employee—The above system assumes that you are operating the business by yourself. When you hire your first employee, the fun really starts!

Our government is very fussy about payroll management. Before hiring your first employee, you must register as an employer, during which you will be provided with the required government forms. Get someone with payroll experience to help you through the maze of paperwork.

Good payroll books are available at your local business supply store. They all have a place to record the hours, rate, gross pay, and other deductions and incomes for each employee. They also have a section for statutory deductions (pension, taxes, etc.).

This book, along with government tax tables, will allow you to calculate the net pay. Remember that government reporting is fairly strict in this area. Make sure your records allow the periodic reporting of totals and employee information.

Two accounts—*Accounts payable* are outstanding invoices for materials and services received but not yet paid for. Keep these invoices in an accordion file with different slots for each day of the month. Once you have approved payment of an invoice, determine the due date and place it into the slot matching the payment date. When you are ready to write checks, pull the relevant dates. At the end of the month, sort all of the invoices as to type of expense, total each of the types, and run a grand total for all of the payables.

Accounts receivable work in a similar fashion. Sort daily invoices by customer and file in an alphabetical folder. At the end of each month, total the invoices for each customer and list all receivables by customer. Do this on a columnar pad so that, in addition to the total, you can also create subtotals for the length of time outstanding. Usually, this is done in 30-day intervals.

Statements—Now you have the basic information necessary to put together a financial statement.

Write down your total sales from the sales record prepared earlier. This is your gross revenue for the month. Next, list your categories of expenses, using check stubs and accounts payable listings. Group together similar expenses, and try to keep the number of classifications low. Add any other charges from your bank statement and add your employer share of payroll taxes. The sum should be your total expenses for the month.

The difference between expenses and revenue will be a rough estimate of net income. Be cautious about this number. To be complete, it must also take into account other non-cash entries such as inventory, taxes and depreciation, which can have a major effect on the bottom line. Take the monthly totals for all classifications and add them to the year-to-date amounts from last month. This will give you a new year-to-date picture of your operation.

Each record should be completed as it occurs. Taking a few moments each day will greatly increase the accuracy of your records and make it easier to understand your financial information.

You might also periodically engage professional help. But this basic system will allow you to maintain control and will likely reduce the fees charged by an outside accountant.

—Dan Sautner is chairman of Padgett Business Services, Athens, Ga. This is the fourth in a series of articles he is writing for LM that addresses small business accounting.

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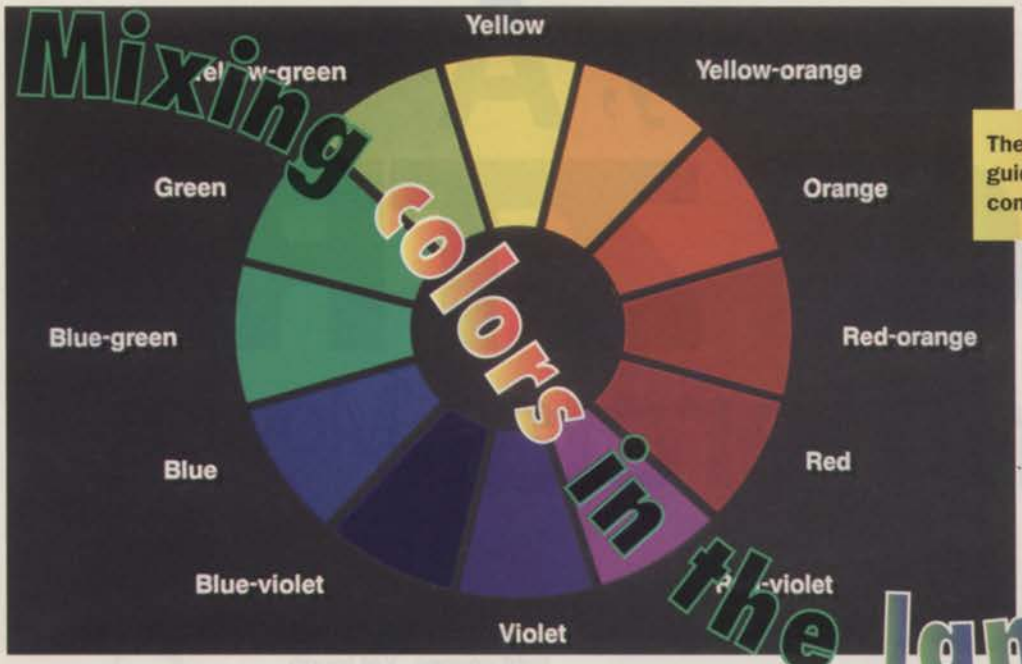
Circle No. 115 on Reader Inquiry Card

Mixing colors in the landscape



The color wheel can be used as a guide to the best color combinations.

Penn State extension agent suggests ways to make your landscape designs distinctive, attractive and formal.

■ "There's something about flowers that affects people and they make you, as a landscape manager, look good," says Judy Schwank of the Penn State Cooperative Extension Service in Leesport, Pa.

"But you've got to think about it a little bit," she adds. Before planning annual displays, you've got to educate yourself about color combinations and a few basics of design.

"Know a little bit about color, mass and texture," Schwank advises. "Think about unity, about pulling elements in the landscape together. At first, limit yourself to two or three varieties."

She says that color can be used in many ways, for instance:

- to create a vista,
- to create borders around areas,
- to highlight signage,
- to help brighten up a dark or shady area, or
- to give the landscape a "signature."

"You need a full color wheel to plan your color scheme," she says. You can find one in an encyclopedia, use the one here, or buy one at a graphic arts supply house. Then, you can combine colors in a number of different ways:

1) Single color

2) Primary color scheme (using red, yellow, blue)

3) Complementary colors (opposites on the color wheel)

4) Split complements (at thirds of the color wheel)

5) Adjacent colors (next to each other on the color wheel)

"Colors give you a psychological feeling," Schwank says. "Reds and yellows project a warm feeling; blues and pastels are cooler."

Other recommendations which she made at the Northeastern Pennsylvania Turfgrass Conference earlier this year:

☞ **Know** the height of the plant you're purchasing.

☞ **Use one** variety of plant, if you're mixing colors, so they're all the same height.

☞ **Don't** line them up like soldiers. Use alternate spacing so they look less formal.

☞ **Remember**: the larger the plant, the faster the color.

☞ **Plant closer** together than label recommendations, using 20 to 30 percent more plants.

☞ **Tall plants** should go in the back, low ones in the front.

☞ **Mix** texture and shapes, or forms.

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Violet ageratum and yellow marigolds go well together.

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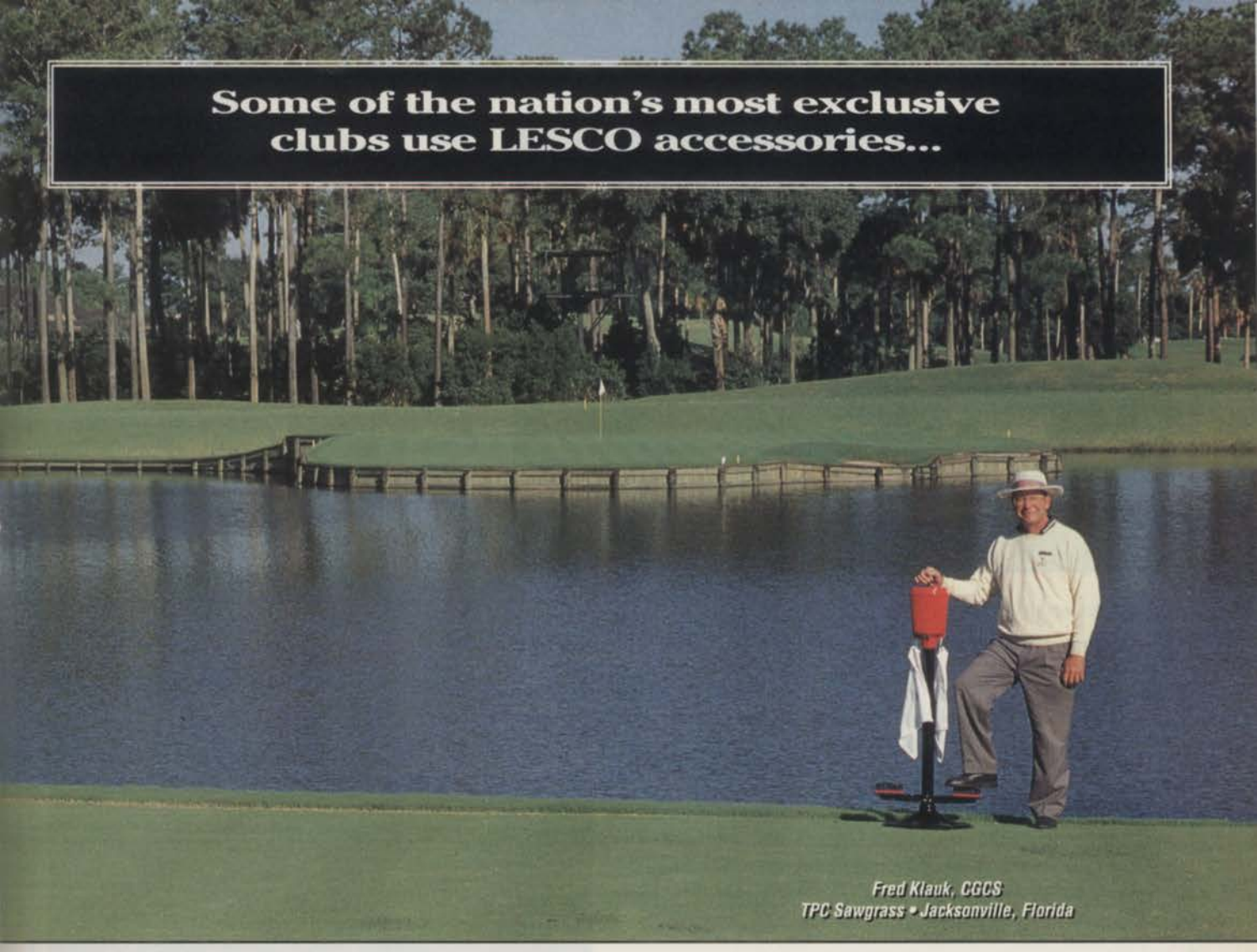

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Zinnias lend a warm feeling to the landscape.

release fertilizer before planting and "hit them with quick-release during the season." During the growing season, you should also take off the dead flowers or you'll have botrytis problems on some plants.

She suggests this list of plants to try in your landscape: marigolds, melampodium (Gold Star Daisy), verbenas, gazania (daisy), petunias, gomphrena, dianthus, pansy, and vinca or periwinkle (but they wilt if planted early in in cold, wet soils).

—Jerry Roche

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For instance, marigolds give a "coarse and massive feeling," cactus-type zinnias a "feathery" feeling.

☞ **Plan** ahead, if possible, and make an arrangement to purchase plants with your greenhouse grower.

"You can make signs or designs out of flowers," she adds, "but be forewarned that they will be high maintenance."

Special designs—If you want to "paint" a special design, start by coloring in squares on graph paper. This method can even work if you want to transpose a photo or complicated logo into flowers.

Before choosing which flowers you want to use, you should analyze your site. When planting, "organic matter helps," Schwank advises. And once the annuals have been planted, they will need some care. She suggests you apply slow-

Pastels have a calming effect on the surroundings.

COLOR HINTS:

■ The Penn State Cooperative Extension Service has some interesting ideas for combining colors in the landscape, as stated by Judy Schwank. But here are some alternative ideas from the Netherlands Flowerbulb Information Center:

● **Blues and yellows**—Combine shades of blue and yellow, selecting from pale yellow to deep gold and sky blue to turquoise. These pairings are best used when one color is selected as the principal shade and the other is used for accent.

● **Pastel passions**—Luscious pinks, corals, creams, lavenders and other pastel shades can capture the imagination. Set amid the lush greens of spring, these soft hues and shades please the eye and complement many interior decors. As homeowners sometimes like to create "extended living spaces," they like the idea of tying the landscape into their overall house decorating.

● **Red and yellow**—To many, especially men, no other color combination captures the joy of springtime so well as red and yellow. Not surprisingly, red and yellow reign as one of the favorite color combinations, not only in the U.S., but worldwide.

● **Shades of white**—White on white, white with off-white and ivory and white are all combinations that have a sophisticated appeal. This look is especially suited for smaller gardens or sections of large garden beds. They also make a fabulous border against a brick or stone wall. For an elegant look, group flowers by size, planting clusters of taller flowers among the shorter plants.

● **Orange and pinks**—Once a no-no, mixing these shades has become, for many, a passion. In the garden, apricot and coral flowers shine alongside "old-rose" shades of pink and mauve.

● **Orchids and yellows**—Taxi-yellow and sun-washed orchid is a color combo that signals the onset of warmer weather. On opposite sides of the color wheel, these two shades—in endless hues—jazz up any colorless corner.

● **Purples, blues and fiery reds**—Flowers offer a wealth of choices in these color families. To avoid a spotty look, use large patches of flowers in e blue and purple family to anchor the scheme, adding smaller areas of red for dynamic accent, or vice versa. A solid dash of white here and there lightens and heightens the impact.

For more information, contact the Netherlands Flowerbulb Information Center: 162 Montague St., Brooklyn Heights, NY 11201; (718) 596-5400.

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Circle No. 149 on Reader Inquiry Card

FAIRWAY CHAMPION.

J-9-2

Weed control in cool season turfgrass

by S. Wayne Bingham
Virginia Tech

■ Turfgrass management programs vary widely and depend, to a large extent, on the area or its use (see chart below). Weed management strategies begin with developing a total management program.

High quality turfgrass needs a greater maintenance intensity to provide a dense cover. In an established cool-season turfgrass, several agronomic practices are very important in the strategies against weeds:

- mowing height for Kentucky bluegrass may be 2½ inches to obtain the best defense against weed encroachment;
- mowing frequency is based on growth rate and is often enough so that only one-third of the turfgrass foliage is removed each time;
- irrigation to supplement natural rainfall when turfgrass begins to show signs of silt is particularly important, and may require an average of two to five times during the summer; and
- proper timing of fertilizer practices are programmed to encourage root development and foliar density. Even then, herbicides are an important part in weed management strategies.

Pre-emergence herbicides—These herbicides are used extensively for crabgrass control; are applied prior to weed seed germination; are relatively insoluble in water; require some irrigation or rain to be most efficacious; are adsorbed to organic matter and clay in the soil surface; and prevent establishment of annual grasses by inhibiting the root growing out of the seed.

The commonly used pre-emergence herbicides in cool-season turfgrasses are listed in Table 1 and rated for effectiveness in crabgrass and goosegrass control as well as tolerances of bluegrass, tall fescue and perennial ryegrass.

For pre-emergence herbicides, it is important to identify the annual grassy weed growing in prior years. Check the label or tables for herbicide effectiveness and turfgrass tolerance before applications are made at least two weeks prior to expected germination.

Crabgrass germination occurs first, then goosegrass three or more weeks later. Crabgrass and goosegrass germinate in open, thin stands of turgrass and emergence is delayed and restricted in dense stands. Some herbicides provide less residual time than others and may require sequential applications. In cases of both crabgrass and goosegrass problems, split applications should be made to have enough herbicide present at the peak germination period of each grassy weed.

Post-emergence herbicides—In many cases, several different broadleaf weeds grow together and often require a combination of two or three herbicides. Commonly used formulations containing one active ingredient include 2,4-D, mecoprop, dicamba and triclopyr. (See Table 2.)

Approximately 120 weeds are important to turfgrass management programs. Each herbicide's active ingredient provides control of a portion of these weeds. For example:

2,4-D + dicamba control about 90 percent of weed species;

2,4-D + diclorprop + dicamba = 85 percent;

dicamba alone = 75 percent;

2,4-D + diclorprop = 70 percent;

2,4-D + mecoprop + dicamba = 70 percent;

2,4-D + dichlorprop + mecoprop = 70 percent;

2,4-D + mecoprop = 65 percent;

2,4-D alone = 50 percent;

triclopyr alone = 40 percent; and

mecoprop alone = 25 percent.

Each label will indicate the most commonly controlled list of weed species

continued on page 38

COOL-SEASON WEED CONTROL STRATEGIES

- ❖ Follow good management practices to grow quality turfgrass.
- ❖ Prevent turfgrass from becoming thin or containing voids for weed encroachment.
- ❖ Select herbicides for turfgrass tolerance for weeds involved.
- ❖ Apply uniformly with calibrated applicator using label directions and precautions.
- ❖ Select the best time for each application.
- ❖ Employ a reliable applicator who will follow instructions and wear protective clothing.

—*S.W.B.*

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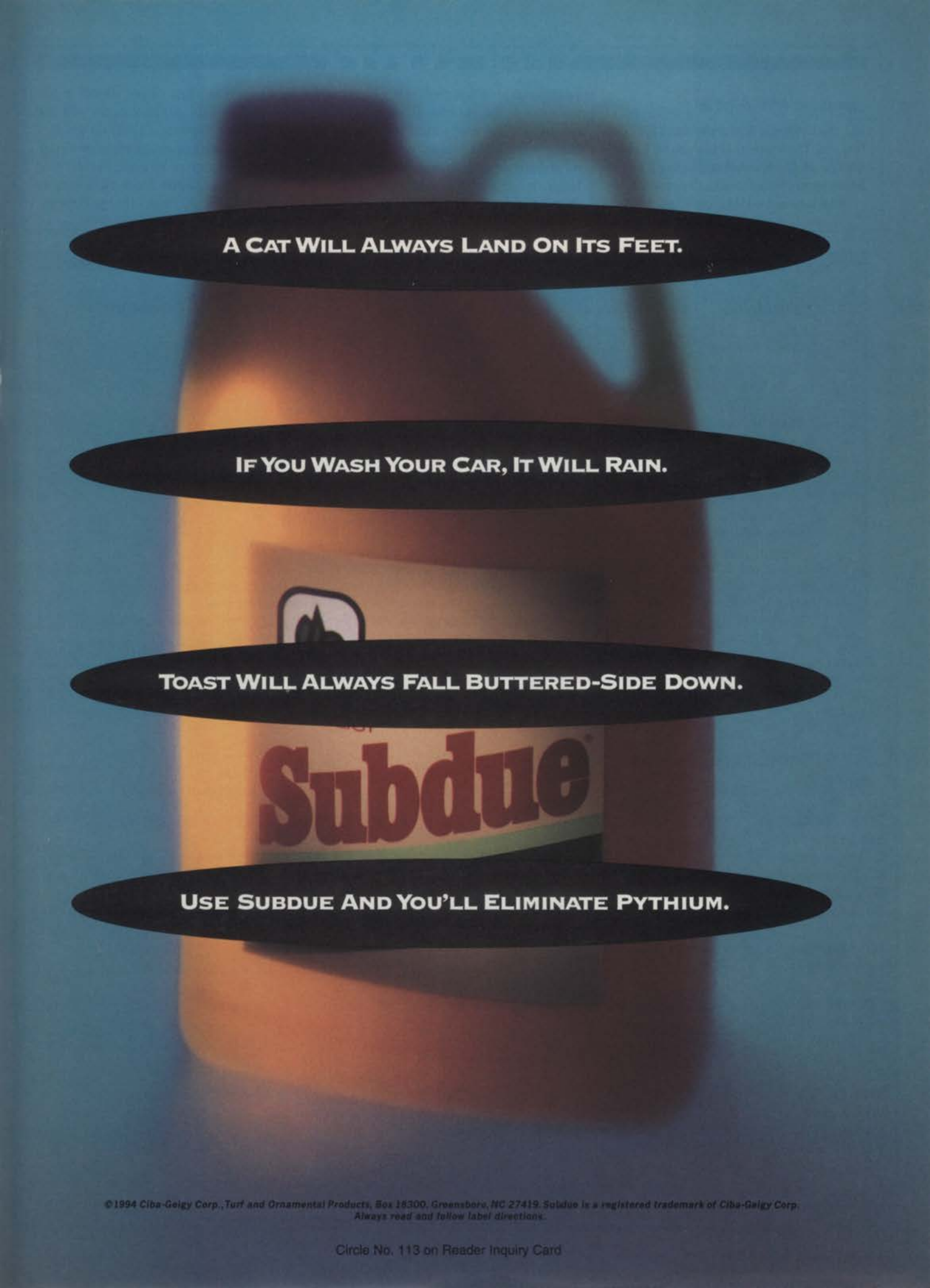
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and the turfgrasses that are tolerant for effective use. Therefore, it is imperative to identify the problem weeds and select a formulation appropriate for selective control.

The newest—Isoxaben (Gallery) is an exceptional broadleaf herbicide which gives pre-emergence control. It appears quite effective for summer annual weeds such as knotweed, spotted spurge, yellow woodsorrel and purslane. With post-emergence herbicides for control of emergend weeds, isoxaben provides some control of perennial weeds such as white clover, dandelion and plantain. It is for pre-emergence and has little post-emergence activity on weeds.

–Dr. S. Wayne Bingham is professor of weed science at Virginia Polytechnic Institute and State University in Blacksburg, Virginia.

Table 1. **TURFGRASS TOLERANCE AND WEED CONTROL RATINGS TO PRE-EMERGENCE HERBICIDES**

Herbicide	Ky. bluegrass[1]	Tall fescue	Perennial ryegrass	Large crabgrass[2]	Goosegrass
Benefin	T	T	T	S	I
Bensulide	T	T	T	S	R
DCPA	T	T	T	S	I
Dithiopyr	T	T	T	S	I
Oxadiazon	T	T	T	S	S
Pendimethalin	T	T	I	S	I
Prodiamine	T	T	I-T	S	I
Siduron	T	T	I	S	R
Benefin + trifluralin	T	T	I-T	S	I
Bensulide + oxadiazon	T	T	T	S	S

[1]Relative tolerance of turfgrass species: T=tolerant; I= intermediate, use with caution at low rates, may cause temporary injury and thinning; S= turfgrass is not sufficiently tolerant or not registered for use.
[2] S= weed is susceptible; I= intermediate control, good control at times with high rates, may require more than one treatment annually; R= resistant, less than 70 percent control.

Source: Dr. Bingham

Table 2. **EFFECTIVENESS OF BROADLEAF HERBICIDES; RESPONSE TO HERBICIDES AND MIXTURES**

Control product ➧ / Broadleaf ➧	2,4-D	dicamba	2,4-D + mecoprop	2,4-D + mecoprop+ dicamba	2,4-D+ dicamba	2,4-D+ diclorprop	2,4-D + triclopyr	triclopyr+ clopyralid
Black medic	R	S	I	S	S	S	S	S
Va. buttonweed	R	R	R	I-R	I	I	I	I
C. chickweed	R	S	S	S	S	S	S	S
M. chickweed	R	S	S-I	S	S	S	S	S-I
W. clover	I	S	S	S	S	S	S	S
C. dandelion	S	S	S	S	S	S	S	S
Dock	I	S	I	I	S	I	I	S-I
Wild garlic	I	I	I	I	S-I	I		
Ground ivy	I-R	S-I	I	I	S-I	I	S	S-I
Henbit	I	S	I	S-I	S	S	S	S
Knotweed	R	S	I	I	S	I		
B. plantain	S	I-R	S	S	S	S	S	S
S. spurge	I-R	S-I	S-I	S-I	S-I	S-I	S-I	S-I
Corn speedwell	R	R	R	R	R	I	I	I
Red sorrel	R	S	I	I	S	I	S-I	S-I
Violets	I-R	I	I-R	I-R	I	I	I	I
Wild carrot	S	S	S	S	S	S	S	
Yarrow	I	S	I	I	S	I	I	
Yellow wood-sorrel	I	R	I-R	I	I	S	I	I

R = Resistant weed, usually less than 70 percent control; I = intermediate level of control, with high ratio or repeat applications; S = susceptible weed, usually controlled at recommended rates.

Source: Dr. Bingham

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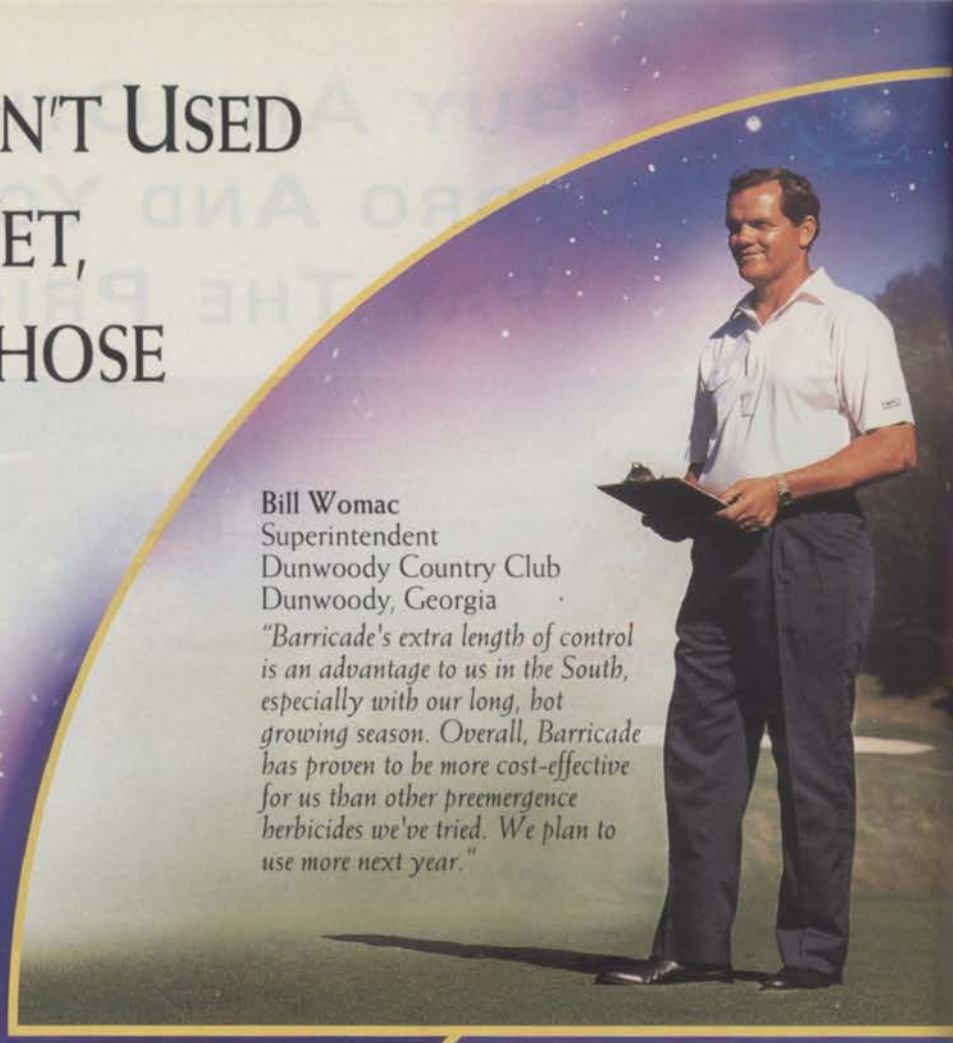

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Superintendent
Dunwoody Country Club
Dunwoody, Georgia

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Circle No. 146 on Reader Inquiry Card

Post-emergence weed control in warm-season turfgrasses

by Tim R. Murphy, Ph.D.
University of Georgia

■ Unlike pre-emergence herbicides which must be applied at certain times of the year, pos—emergence herbicides provide the turfgrass manager with viable options to control weeds over the entire year. A complete chemical weed control program can be based on post-emergence herbicides; however, most post—emergence herbicides usually cause temporary injury to turfgrasses. Therefore, the primary use of postemergence herbicides is to supplement the level of weed control obtained with the use of pre-emergence herbicides.

Proper turfgrass maintenance is the first step in the development of a successful post-emergence weed control program. Adherence to recommended fertility programs, water requirements, mowing heights and schedules, and controlling diseases and insects will significantly increase turfgrass competition with weeds. It will also improve the effectiveness of the post-emergence weed control program.

Post-emergence herbicides offer several advantages relative to the use of pre-emergence herbicides:

- Can be applied as less expensive "spot treatments" or "as needed" directly to a weed infestation.
- Postemergence herbicides control many problem annual and perennial weeds that are not controlled by pre-emergence herbicides.
- Low rates of most post-emergence herbicides may be used on newly sprigged or sodded warm-season turfgrasses. (most pre-emergence herbicides are recommended only for established turfgrasses.
- In areas that are scheduled to be overseeded or renovated, the majority of postemergence herbicides can be used prior to renovation. The time interval from application to seeding, sprigging or sodding operations for most pre-emergence herbicides varies from six weeks to 4 months.

Think first!

Numerous herbicides are available to control emerged weeds in warm-season turfgrasses (Table 1); however, several factors must be considered in selecting the appropriate herbicide.

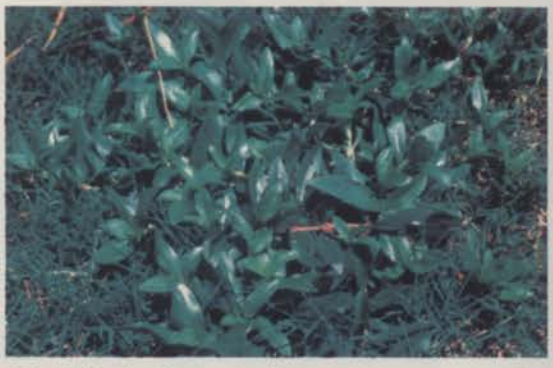
Turfgrass Tolerance: The single most important factor in selecting a post-emergence herbicide is the tolerance of the turfgrass to the herbicide. Warm-season turfgrasses differ in their tolerance to post-emergence herbicides (Table 2). For example, bermudagrass has good tolerance to MSMA and DSMA; however, carpetgrass, centipedegrass and St. Augustinegrass are severely injured by these herbicides. Additionally, cultivars within a species may respond differently to the same herbicide. 'Meyer' zoysiagrass has better tolerance to MSMA than 'Emerald' or 'Matrella'. The product label should always be consulted to determine if the herbicide may be used on a particular turfgrass species.

Weed Species: Correct weed identification is a prerequisite for the selection of an appropriate herbicide. Weed identification assistance is available at county Extension Service offices and through chemical company representatives. After the weed has been identified, the herbicide label should be reviewed to determine if the herbicide will control the problem weed. Also, reference to land grant university weed control guides may show the effectiveness of herbicides in controlling weed species that are not listed on the herbicide label.

Application Frequency: For some weed species and herbicides, a repeat application is necessary to effectively control the weed. For example, two applications of MSMA + Sencor, at a 7 to 10 interval, are necessary to control goosegrass. In contrast, one application of Illoxan will usually control goosegrass.

Ornamental Tolerance: Ornamentals may be injured by spray or vapor drift or by root absorption of the herbicide. Ester formulations of the phenoxy herbicides (2,4-D, dichlorprop) easily volatilize during warm temperatures and can injure sensitive ornamentals by vapor drift. Therefore, they should not be used during the warm months of the year on or near sites that contain ornamentals. Spray drift damage can be prevented by spraying when the wind velocity is less than 5 miles per hour, and selecting a nozzle tip and spray pressure that produces large spray droplets.

Due to their soil residual characteristics, atrazine (Aatrex) and dicamba (Banvel) and dicamba-containing herbicides can injure broadleaf ornamentals via root uptake, particularly on sandy soils if rainfall occurs immediately after application. Avoid the use of these herbicides over the root zone of shrubs and small trees.



Virginia buttonweed

Suggestions for use

Apply post-emergence herbicides to small, actively-growing weeds.

Perennial and annual weeds that are growing under good soil moisture conditions at moderate air temperatures are easier to control with post-emergence herbicides than weeds that are stressed due to adverse environmental conditions. Target the application to coincide with good soil moisture conditions at air temperatures of 60 to 90° F. Applications on cold, wintery days, or to drought stressed weeds will result in poor weed control.

Post-emergence herbicide use should be avoided when turfgrasses and weeds are stressed due to high air temperatures or drought.

The tolerance of warm-season turfgrasses to post-emergence herbicides decreases at air temperatures greater than 90° F., when turfgrasses are drought stressed or when they are growing under high soil moisture and high relative humidity conditions. Herbicides that contain 2,4-D, dicamba, mecoprop, dichlorprop, imazaquin, MSMA and DSMA should not be applied at high air temperatures since there is an increased risk of unacceptable turfgrass injury. Always follow the most restrictive warning that is shown on the label. As previously mentioned, weed control is also poorer when herbicides are applied to environmentally stressed weeds than when applied to actively-growing weeds. Additionally, the tolerance of warm-season turfgrasses to herbicides is generally lower during spring green-up than when the turfgrass is dormant or after full green-up. Fortunately, research has shown that the decrease in turfgrass quality that may result from the use of post-emergence herbicides during green-up is temporary and persists for 2 to 6 weeks after application. If a dense weed population necessitates the use of a post-emer-

continued on page 46

TECH CENTER *continued from page 42*

Table 1.

POST-EMERGENCE HERBICIDES FOR WARM-SEASON TURFGRASS[1]

Common Name	Trade Name(s)	Uses
asulam	Asulox	Grass weed control in St. Augustinegrass
atrazine	Aatrex, others	Pre- and post-emergence broadleaf and grass weed control
bentazon	Basagran T/O	Primarily used for yellow nutsedge control
bentazon + atrazine	Prompt	Yellow nutsedge/broadleaf weed control in centipedegrass, St. Augustinegrass, zoysiagrass
bromoxynil	Buctril	Broadleaf weed control on non-residential turf
2,4-D	numerous	
2,4-D + dicamba	Eight-One	Broadleaf weed control
2,4-D + dichlorprop	Weedone DPC Amine, Weedone DPC Ester	Broadleaf weed control
2,4-D + mecoprop	Lescopar, 2 Plus 2	Broadleaf weed control
2,4-D + mecoprop + dicamba	Trimec Classic, Trimec 992, Three-Way	Broadleaf weed control
2,4-D + mecoprop + dichlorprop	Weedestroy Triamine, Weedestroy Tri-Ester	Broadleaf weed control
dicamba	Banvel	Broadleaf weed control
diclofop-methyl[2]	Illoxan	Goosegrass control in bermudagrass
diquat[3]	Diquat	Winter annual weed control in dormant bermudagrass
DSMA	numerous	Grass weed control in bermudagrass and zoysiagrass
ethofumesate	Prograss	Pre- and early post-emergence annual bluegrass control in over- seeded bermudagrass, and common bermudagrass suppression in St. Augustinegrass
fenoxaprop	Acclaim	Annual grass control and suppression of bermudagrass in zoysiagrass
glyphosate	Roundup	Winter annual weed control in dormant bermudagrass and bahiagrass
imazaquin	Image	Purple nutsedge and wild garlic control in warm-season turfgrasses (except bahiagrass); also controls certain broadleaf weeds
mecoprop	Mecomec, Lescopex	Broadleaf weed control
mecoprop + 2,4-D + dicamba	Southern Trimec, Trimec Bent	Broadleaf weed control
MCPA + mecoprop + dicamba	Trimec Encore, Encore DSC	Broadleaf weed control
MCPA + mecoprop + dichlorprop	Weedestroy Triamine II, Weedestroy Tri-Ester II	Broadleaf weed control
metribuzin	Sencor Turf	Goosegrass control in bermudagrass. Also controls prostrate spurge and numerous winter annual broadleaf weeds
metsulfuron	DMC	Controls 'Pensacola' bahiagrass, wild garlic, prostrate spurge, many broadleaves
MSMA	numerous	Grass weed control in bermudagrass and zoysiagrass
MSMA + 2,4-D + mecoprop + dicamba	Trimec Plus	Grass and broadleaf weed control in bermudagrass, zoysiagrass
pronamide	Kerb	Annual bluegrass control in bermudagrass
sethoxydim	Vantage	Annual grass control and suppression of bahiagrass in centipedegrass

[1] Refer to the herbicide label for a complete listing of tolerant turfgrasses and labeled application sites.
[2] Diclofop-methyl has a state label for use in Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Texas.
[3] Diquat has a state label in Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee and Texas for winter annual weed control in dor- mant bermudagrass.

Source: Dr. Murphy

more on page 46

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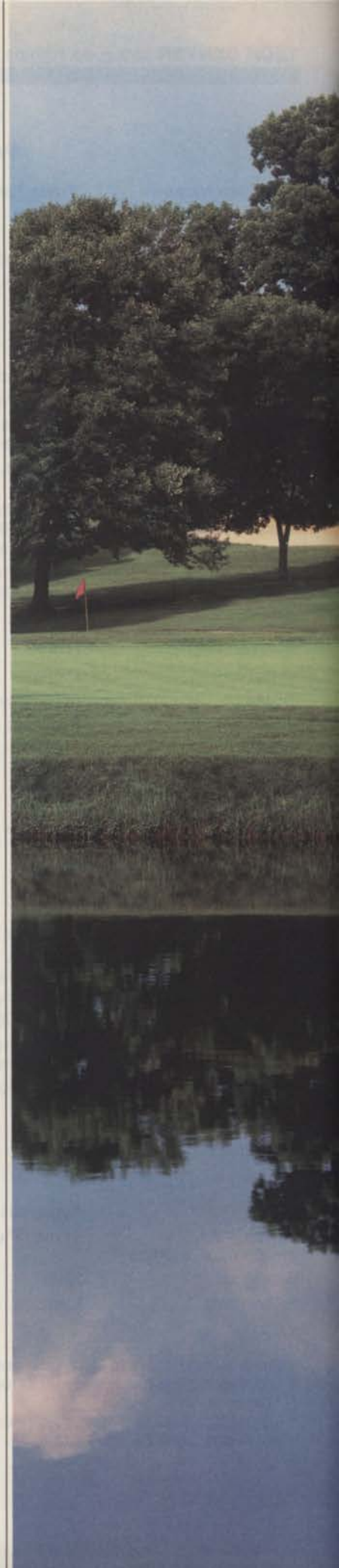

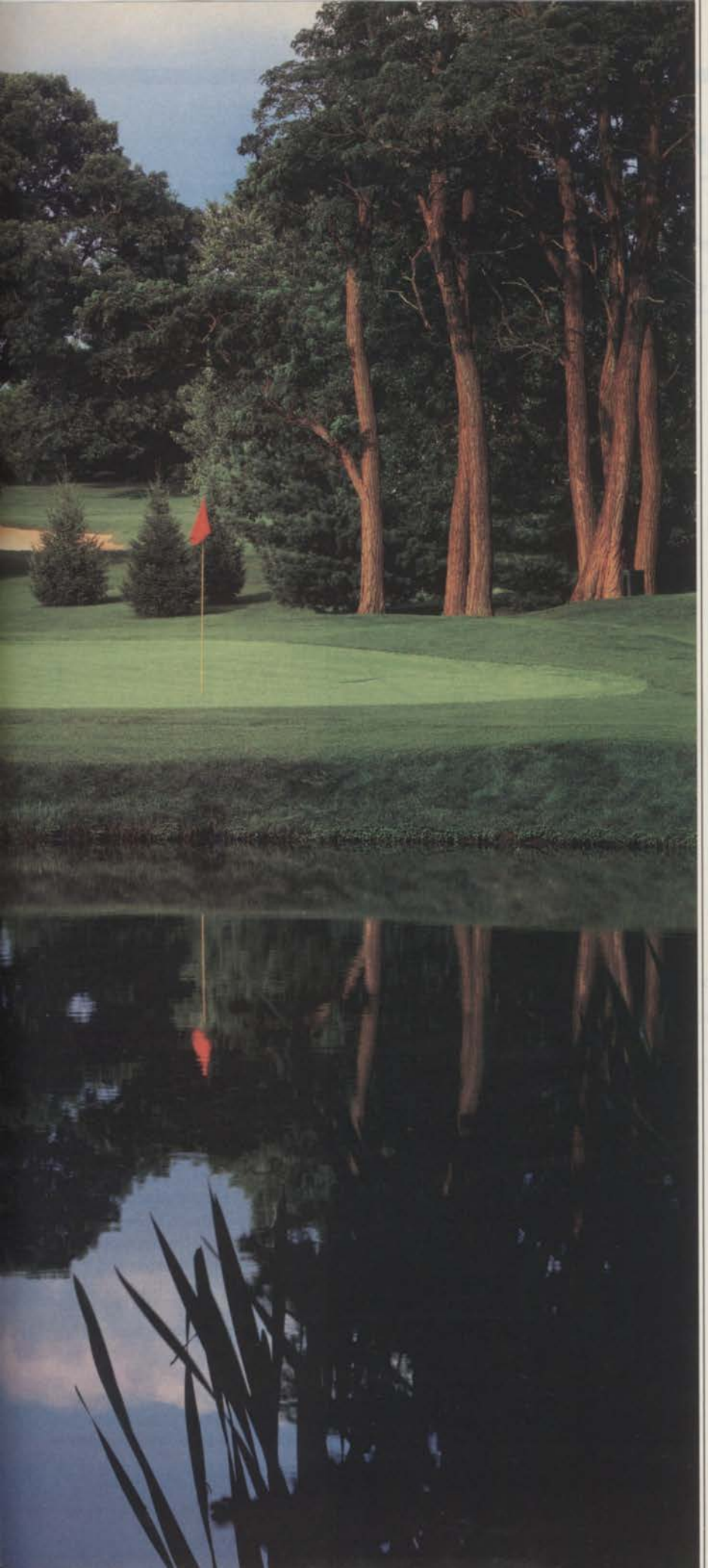

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Table 2. WARM-SEASON TURFGRASS TOLERANCE TO POST-EMERGENCE HERBICIDES

HERBICIDE	Bahiagrass	Bermudagrass	Centipedegras	Carpetgrass	St. Augustinegrass	Zoysiagrass
asulam	NR-S	T[1]	NR-S	NR-S	I-T	NR
atrazine	NR-I	S(D)	T	NR-T	T	I
bentazon	T	T	T	NR-T	T	T
bentazon + atrazine	NR-I	NR-I	NR-T	NR-I	NR-T	NR-T
bromoxynil	T	T	T	NR-I	T	T
2,4-D	T	T	I	I-T	S-I	T
2,4-D + dicamba	T	T	S-I	I-T	S-I	T
2,4-D + diclorprop	T	T	I	I-T	S-I	T
2,4-D + mecoprop	T	T	S-I	I-T	S-I	T
2,4-D + MCPP + dicamba	I-T	I-T	S-I	I-T	S-I	T
2,4-D + MCPP + diclorprop	T	T	I	I	I	T
dicamba	T	T	I-T	T	S-I	T
diclofop-methyl	NR	T	NR	NR	NR	NR
DSMA, MSMA	NR-S	T	NR-S	NR-S	NR-S	I
fenoxaprop	NR-S	NR-S	NR-S	NR	NR-S	T
glyphosate	S(D)[2]	S(D)[2]	S	S	S	S
imazaquin	NR-S	T	T	NR-I	T	T
MCPA + MCPP + dichlorprop	T	T	I	I	I	T
mecoprop (MCPP)	T	T	S-I	I-T	S-I	T
metribuzin	NR-I	T	NR-S	NR-S	NR-S	NR-S
metsulfuron	NR-S	T	I-T	NR-I	I-T	NR-S
pronamide	NR	T	NR	NR	NR	NR
sethoxydim	NR-S	NR-S	T	NR-I	NR-S	NR-I

T = Tolerant at labeled rates
I = Intermediate tolerance, use at reduced label rates
S = Sensitive, do not use this herbicide
D = Dormant applications are recommended

Source: Dr. Murphy

gence herbicide during green-up, use only the lowest recommended or one-half the recommended rate to minimize herbicide injury to the turfgrass.

Single applications at high rates generally cause more turfgrass injury than repeat applications at low rates.

Additionally, single, high rate applications often do not control perennial weeds. The repeat application is usually made at interval of 7 to 14 days after the first application, or when regrowth of the weed is noted.

Mowing schedules must be coordinated with post-emergence herbicide applications.

Generally, mowing should be delayed 3 to 4 days before or after a post-emergence herbicide application. The delay prior to application will increase the leaf surface area of the weed and spray deposition. The delay after application is necessary to allow adequate time for herbicide absorption and translocation in the target weed species.

Do not apply post-emergence herbicides immediately before rainfall or irrigation.

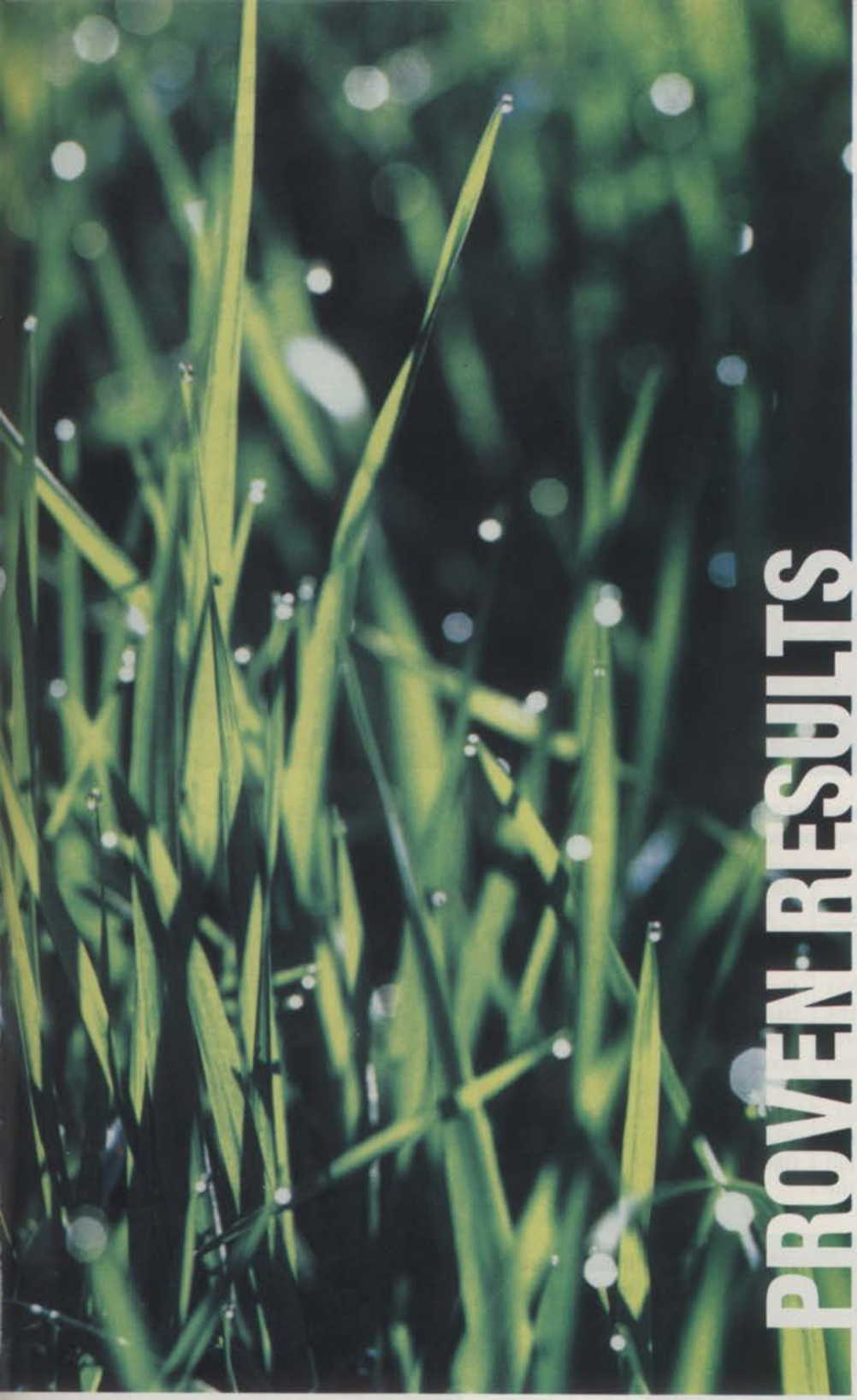
Rainfall or irrigation immediately after application can wash the herbicide from the treated weed foliage and decrease control. On irrigated sites, watering drought stressed weeds one to two days before a post-emergence herbicide application will usually improve control of the problem weeds species.

Use surfactants and crop oil concentrates according to label directions.

The effectiveness of many post-emergence herbicides is enhanced by the addition of a crop oil concentrate or surfactant to the spray mixture, particularly under less than ideal spray conditions. However, indiscriminate use of surfactants or crop oil concentrates can increase the risk of turfgrass injury. The herbicide label should be reviewed to determine if the use of a surfactant or crop oil concentrate is recommended.

Calibrate all spray equipment and train the operator.

--The author is extension agronomist in weed science at the University of Georgia's Cooperative Extension Service.



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Circle No. 123 on Reader Inquiry Card

The majestic maple: mid-America's choice

Because of its traits, silver maple is one of the poorest choices for a street tree. Excessive pruning–to avoid power lines–causes heart rot.

Silver maples can grow to heights of 80 feet or more.

by Kenneth J. Schoon, Ph.D.
Indiana University Northwest

■ The dependable maple tree has become the most popular tree in the midwestern portion of the U.S., according to statistics from the Midwest Urban Tree Index.

Maples have a number of characteristics which contribute to their popularity: attractive shape, dense shade, fall color and (especially in the case of the silver maple) rapid growth.

The Index classified communities into three categories: urban centers with populations greater than 150,000; suburban communities adjacent to urban centers; and small cities of fewer than 65,000 persons.

The silver maple is not only the most popular shade tree in urban mid-America, it is nearly three times as common as the second-

continued on page 58

If planted at a spacing of 30 feet, the maple will run out of elbow room long before it reaches its potential spread.

The maple comprises more than 40 percent of all trees on urban public lands in the Midwest.

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continued from page 48

place sugar maple. In 20 of 27 communities surveyed in the Index, the silver maple was the most common tree, and in five more communities it ranked second. In 25 of the communities, at least one species of tree comprises more than 15 percent of total trees. In 20 of the communities, it is the silver maple.

Other trees that exceed 15 percent in individual communities are: sugar maple, American elm, green ash, Norway maple, Siberian elm and callery pear.

As late as 1965, Donald Wyman (in "Trees for American Gardens") described the American elm as the most popular shade tree in North America. But as Dutch elm disease ravaged parts of the country, elms have largely been replaced by maples and ash trees. The American elm's abundance in a few midwestern communities today, such as Oak Park and Evanston (Ill.) is largely the result of aggressive maintenance programs.

Each urban center in the Index lists silver maple as its most common. Urban centers, though, contain many trees seldom planted today: Siberian elm, sycamore, mulberry, cottonwood, catalpa, boxelder and ailanthus.

Ornamental trees have become very popular in the suburbs. While crab apple trees are now found throughout all midwestern regions, suburban communities have the largest concentraton of other small ornamental fruit trees like the fruitless callery pear. In Munster, Ind., for example, 78 new "Bradford" callery pears were planted in 1991.

LaPorte, Ind., known as the "Maple City," uses a figure of a maple tree in its city seal. Seventy-eight percent of the city's street trees are maples, most of them sugar maples.

Northern or southern, newer or older communities, urban, suburban or small city, it is the maple that comprises more than 40 percent of all trees on urban public lands in the Midwest.

--Photographs courtesy of Holden Arboretum, Mentor, Ohio.

MOST COMMON URBAN TREES

	Urban centers	Suburban communities	Small cities
1.	Silver maple	Silver maple	Silver maple
2.	Norway maple	Norway maple	Sugar maple
3.	Green ash	Green ash	Red maple
4.	American elm	Honeylocust	Norway maple
5.	Sugar mpale	Sugar maple	Green ash
6.	White ash	American elm	White ash
7.	Hackberry	White oak	American sycamore
8.	Siberian elm	Siberian elm	Siberian elm
9.	Honeylocust	Red maple	Honeylocust
10.	Red maple	Pear	Pin oak
11.	Crabapple	Crabapple	Little-leaf linden
12.	Pin oak	Northern red oak	Tulip tree
13.	Little-leaf linden	Boxelder	Sweetgum
14.	American sycamore	Eastern cottonwood	Northern red oak
15.	Mulberry	White ash	Crabapple
16.	Eastern cottonwood	Pin oak	Hackberry
17.	Eastern white pine	American basswood	Redbud
18.	American basswood	American sycamore	American elm
19.	Northern catalpa	Little-leaf linden	Northern catalpa
20.	Colorado blue spruce	Black locust	Pear

Source: Midwest Urban Tree Index

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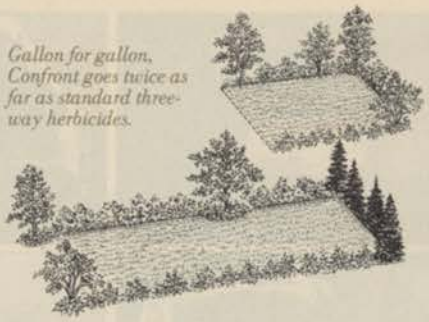
The thing we're trying to help you avoid is overkill. Because if you can control weeds, isn't that enough? So here's a less aggressive approach to managing weeds. A few things you can do to use less post-emergence herbicide to get the weed control you need.

Gallon for gallon, Confront goes twice as far as standard three-way herbicides.



At last. A herbicide a like eradicate, eliminate

A Young Weed Is A Vulnerable Weed.

The best time to apply your postemergence herbicide is early—when you first see weeds emerge. This is when weeds are the most vulnerable to herbicides. You'll get better results from your application, and you'll reduce the need for treating hardened weeds later.

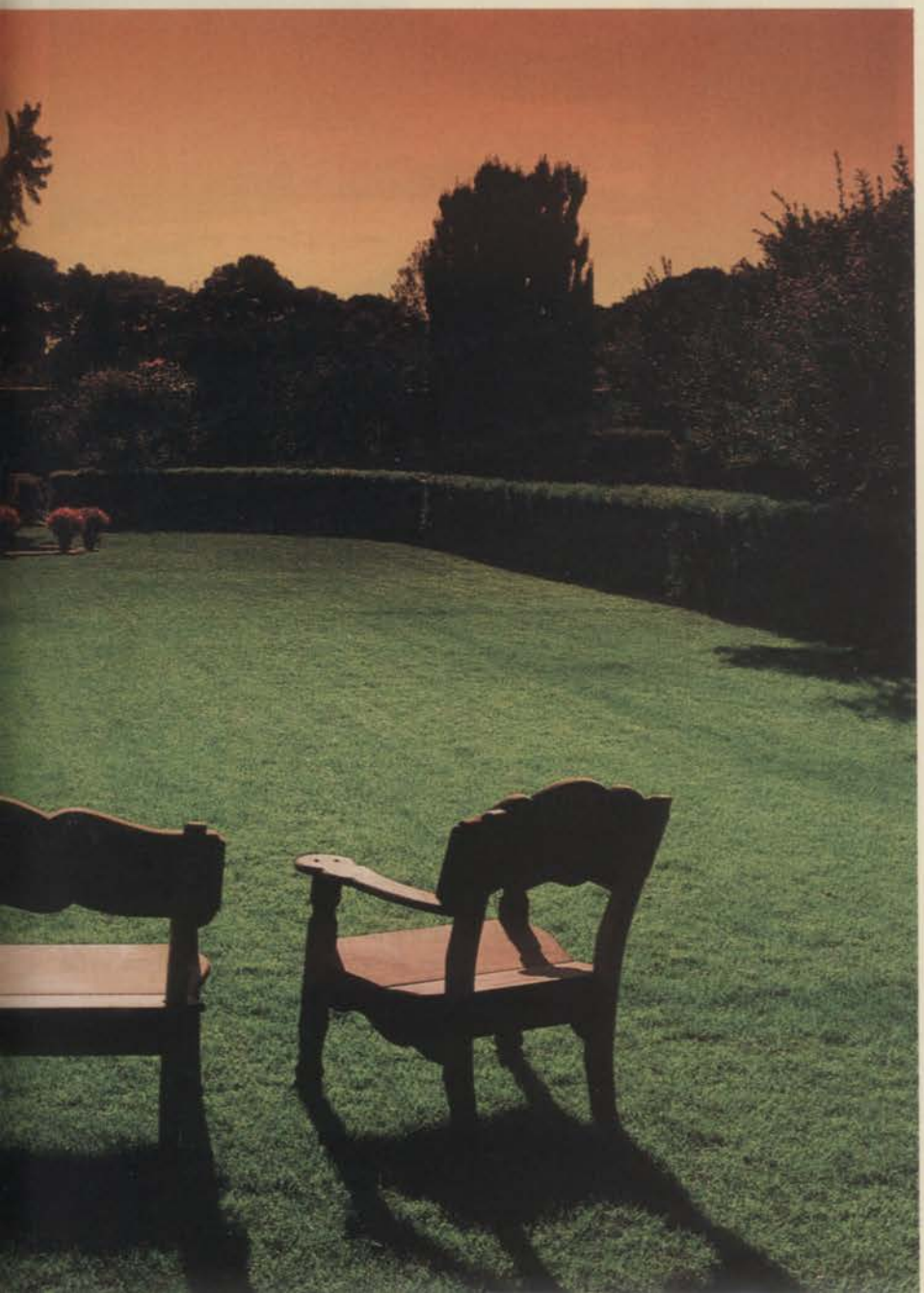
First, look for weedy areas before applying herbicide. That way, you can use spot treatments instead of broadcast applications (a practice recommended by the EPA), and you'll get very good results. It sounds simple, but it's one of the most effective ways to use less herbicide.

Also, calibrate your equipment frequently, and use the

correct rate of herbicide for the weed you want to control. You'll get better results from your application, and reduce the chances you'll have to re-apply.

It's important to select a postemergence herbicide that does the job well the first time you apply it. Confront* herbicide is a good choice. Nothing controls tough broadleaf weeds longer or better. It delivers the fastest action you can find on clover. Confront gets to the roots to keep weeds from coming back in cool or warm season turfgrass. It's also a good choice for your sensitive accounts where you prefer a herbicide without dicamba, 2,4-D or MCPP.

d that doesn't use words or destroy.



Of course, there isn't room here to outline an entire weed control program. That's why we created The Turf Manager's Guide To Responsible Pest Management.

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Sand replacement, weather or not...

Off-season jobs can be complicated by inclement weather. This project at Terrace Park went as planned during a break in January's bitter cold.

The swinging conveyor used for this job can fill a bunker in about 10 minutes. The tires exert a mere 9 psi of pressure on the turf.

■ If you travel Ohio much in winter, you've felt the widely ranging temperatures between the state's northern and southern halves. If it's 32 degrees in Cleveland, it may be 40 or higher in Cincinnati. Usually.

But this has been a most *un*usual winter—with record cold north and south—and it made Rick Grote's latest project at Terrace Park Country Club near Cincinnati tougher than he thought it would be.

The project: new sand in each of the course's 42 bunkers.

"We knew two or three years ago this project was going to come about," says Grote. "The members didn't care for the sand we had (crushed limestone); they wanted a looser, silica-type sand."

Never-say-die guy that he is, Grote turned the cold mid-January weather into a positive.

"This kind of job is easier in winter anyway, when the ground is frozen," he says. "We don't have the problem of wet sand, and the snow helps pack the sand down. By April it'll be playable, with no more 'fried eggs' (buried golf balls); and you won't be able to putt out of the sand."

In less than a week's time, Grote and crew—Karl, Joe, Gene, Doug and Mike—replaced the old crushed limestone with 850 tons of higher quality, silica sand.

The truck used to transport and spread the sand—called a "floater" due to the large flotation tires—was assembled by the R.K. Hydro Vac company of Covington, Ohio. A high-speed conveyor boom propels the sand at distances of up to 35 feet. Driver Jim Hart says the R.K.Hydro Vac company sanded the tire treads down to make these heavyweight jobs possible.

"It's a hell of a lot easier with the Hydro Vac, rather than rutting up the course with dump trucks and utility vehicles," says Grote. There's also less back-and-forth for refills, which can make it a monotonous, time-consuming job.

Neighboring superintendents visited the course throughout the week to view the job's progress.

Project cost—This job wasn't cheap. The 900 tons of silica sand was the big-ticket item: $30 a ton, delivered.

The Hydro Vac rented for $4000 a week, including driver wages. A week's use of a Case front end loader cost $1600.

Grote planned well in advance to secure the funds needed for the job.

"We try to have at least a five-year plan on capital expenditures. That way, it's easier to get the money because the club planned for it. Members can only take so many surprises every year."

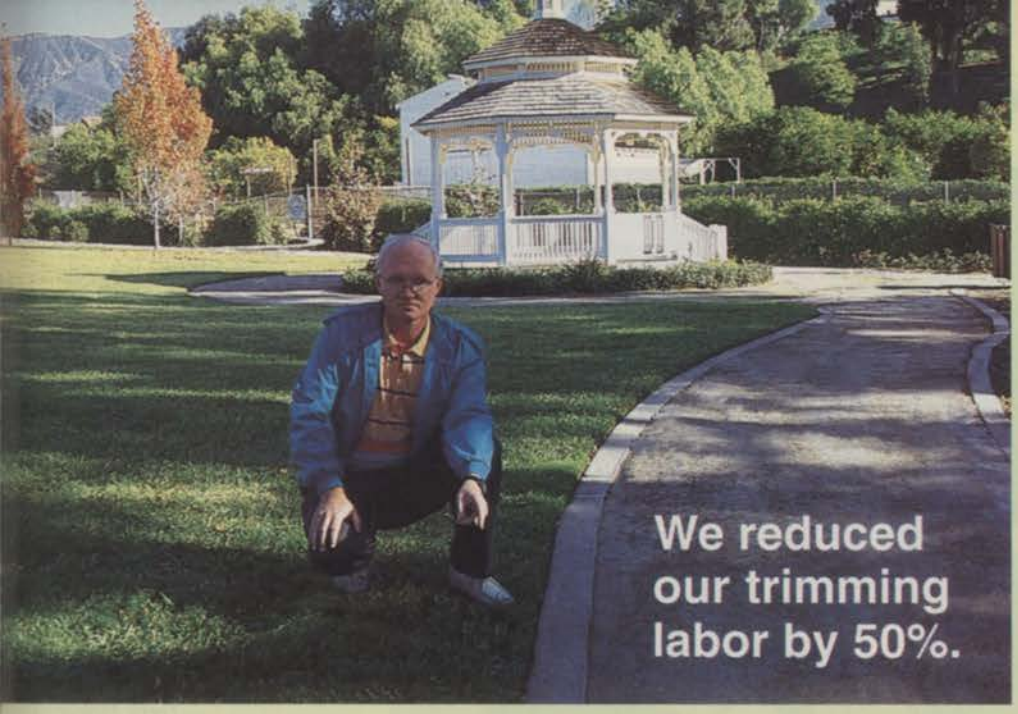
Around the course—Terrace Park has bentgrass greens, tees and fairways. Greens are mowed at 1/8 inches with a Toro Triplex.

But Grote always tries to minimize heavy equipment traffic on greens. Turf groomers are used about twice a week. Rollers are used sparingly; Grote doesn't want to encourage compaction-related problems.

Grote believes Scott's growth regulator, Enhance, helps keep greens fast without having to use equipment as often. It slows turf growth down for about three weeks, he says.

"We topdress only after we aerify, and once or twice during the summer to fill in unhealed ball marks or to slick the greens up a bit," he notes.

Grote often makes test plots available for control product testing. Recently, Monsanto tested its new Vantage, for



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Circle No. 141 on Reader Inquiry Card

775-1293

Rick Grote: Keeps a 'clean' course, plans well ahead for expensive projects.

nutsedge control, at the course.

Grote's next project might be cart paths; but he's not sure.

"A lot of the members like to walk, the course" he explains, "and there's not a lot of room for cart paths," because of Terrace Park's narrow layout.

Grote's a busy man; he's currently on the board of the Ohio Turfgrass Foundation.

Terrace Park was built in 1931, and is situated along a busy ribbon of winding road in Milford, Ohio, about 15 miles east of Cincinnati.

—Terry McIver

Computers a worthwhile adventure in trial and error, say these superintendents

■ We all know by now that a computer can make your life easier. It's just a matter of admitting that you need one—and granted, you might not need one...yet—and then taking the plunge.

"I don't think there is a low to medium budget golf course that would not be receptive to a $1000-$3000 expense to buy a computer," says **John Carlone, CGCS,** of the Middle Bay Country Club, located in Oceanside, N.Y.

"We're in the information age, and we need a way to manage that information," says Carlone, whose computer skills progressed slowly, to a point where he's now-comfortable enough about the subject to give a speech to his peers. Carlone told his story of computer enlightenment to superintendents at the recent GCSAA International Show in Dallas.

Payroll, irrigation scheduling, budgeting, landscape management, it's all possible with a good computer system.

To narrow his learning curve, Carlone turned to a colleague more skilled in computer science, superintendent Duane Patton at Lawrence Country Club in Lawrence, Kans.

Patton visited Carlone twice to lend a hand.

Carlone says having someone help with initial computer training is "the most valuable thing you can do. Trying to teach yourself can be very frustrating, not knowing where to start or where to go for help. My computer was off for a number of months before I had someone come in and teach me."

A good reference book helps, too. Carlone's computer bible is "*DOS for Dummies.*" (DOS stands for disk operating system); he'll page through it at any spare moment.

Corey Haney, super at Bristow Manor Golf Course, Arlington, Va says computers are not a cure-all, but they are helpful business tools.

Carlone: Hire a tutor for computer help

"They're not going to solve all your problems but they're certainly going to help you with any you have now," he promises.

Haney says computers are "nothing more than electronic replacements for tools we use everyday.

"The computer can process and store large quantitities of information, and help you use it in different ways; it can also help you make decisions."

What's right for you may not be right for the super down the road, but Haney believes the common computer denominator is how it improves efficiency.

Word processing is "an eletronic typewriter, no more or less. Newsletters can be written to communicate with the golfers, and help explain course projects. Spread sheets can be used for budget calculations, cost per acre, annual costs, all faster, neater and more professional.

"(Computer skills) could certainly become a career requirement," says Haney—and the superintendent who ignores the technology might be overlooked for someone who can operate even a most basic system.

"The popularity of golf has led to what seem like longer seasons," says Haney. "We have tougher conditions and more demanding golfers. Computers will reduce the time we spend indoors."

—Terry McIver

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Circle No. 139 on Reader Inquiry Card

Quiet Capitol Hill signals deceiving lull

A march in February: LCOs traveled together to the Old Executive Office Building to learn about Pres. Bill Clinton's Health Care Reform Package.

LCOs keep up their guard, say reinforcements are desperately needed during PLCAA's fifth annual 'Day on the Hill.'

■ Lawn care pesticide safety hearings appear unlikely this spring.

Industry-crippling legislation, long threatened by Sen. Joseph Leiberman, (D-Conn.), simmers on a back burner. It's apparently not robust enough—not even after four years of cutting and stitching—to fight its way to a committee hearing.

LCOs paid scant attention to either issue during the Professional Lawn Care Association of America's (PLCAA) "Day on the Hill" early this past February in Washington, D.C. And it doesn't look like a significant revision of FIFRA is going to make much headway on The Hill in 1994 either.

No crises.

No controversy.

Few real issues with any emotional weight behind them surfaced during PLCAA's fifth annual legislative foray to the U.S. capital.

Joel Blackwell, far left, gave LCOs excellent advice on communicating with legislators. The others (left to right): Doug Hague, Al Cortez, Gene Pool and Phil Fogarty, all of Ohio.

But Andrew Hines, president of Shrub & Turf, drove the 13 hours from Athens, Ga., to attend the event. So he wanted to get his say—which was that LCOs are like an opossum creeping across a super highway with "enviro-nuts" working the gears of a smoke-belching 18-wheeler.

"We just stuck our heads out of the hole and we're going to get hit with the back side of the hurricane," Hines insisted, admitting that some of this skepticism over this apparent lull in anti-lawn care feeling was fueled by seeing activists give his industry, and a fellow green industry business owner, a public relations and regulatory keel-hauling in Georgia in 1992.

"The entire purpose of some of these people is to destroy our industry," insisted Hines. "They tell us they're going to whip our butts. Then they do everything they can to do it. The scary thing is, they've been involved with politics a lot longer than we have."

The fiesty, red-haired Hines (Read his letter in the "Hot Topics" section.) was one of about six LCOs asking the tough (well, as tough as they got anyway) questions of U.S. EPA's Victor Kimm, three congressional agricultural committee staffers, and Capitol Hill columnist Charlie Cook.

Some other LCOs speaking out about their continuing concerns over misguided regulation included people like Coloradoan Don Kurtz of Lawn Medic; Don Tannahill, co-owner of Tridon Lawn Service, Olathe, Kans.; and Sam Lang, Fairway Green, Raleigh, NC.

These people received their political experience—and sometimes their first regulatory bloody noses—on local and state issues. They obviously felt confident enough to take their concerns to a higher level. That they did.

To the person, however, they urged many other LCOs, the ones back home, to become similarly involved. That means visiting lawmakers—local, state and federal (or their legislative aides)—then keeping in regular touch with them.

"Our legislators want to hear from us. They want to hear our story," pleaded Tannehill. "They want to know how their decisions are affecting our industry, but they're not hearing from enough people in the industry."

Against this backdrop of two raw, sunless days in Washington D.C., the LCOs, with no dragons to fight off, practiced their presentations. Then they launched themselves to The Hill to reintroduce themselves and their concerns to the legislators and the hand-shaking cadre of cautiously smiling assistants, appearing almost by magic, one each from the senate and congressional offices.

For the most part, LCOs found a warm welcome from many Senators and Congresspeople and their assistants too.

The lawn pros touched on all the usual matters—preemption, pre-notification, registries, etc.,—but primarily they offered themselves as sources of information, particularly regarding the use of specialty chemicals.

But in spite of the sporadic outbreaks of incredulity—which, on one occasion, filled the Old Executive Building like a bad stink during a patronizing discussion of the administration's health care proposal—this was about as close to a Capitol Hill love-in as LCOs have mustered to date.

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Circle No. 140 on Reader Inquiry Card

'We're learning how the game is played,' says Don Kurtz of Lawn Medic, Colorado.

area's three major airports, and an American Airlines jet slid off a National Airport runway (fortunately with no injuries).

That sealed Washington, and about half the LCOs spent an extra day there, an expense in time and money some of them didn't need (particularly since an eight-ounce draft cost $2.30 at the hotel bar). Most operate businesses grossing $500,000 or less annually and they don't, as a rule, have fat travel budgets. In fact, a few of the stranded LCOs fretted over snow-removal accounts waiting for them back home. Snow, it turned out, fell in the East everywhere there wasn't freezing drizzle.

But, it was the lack of an obvious legislative or regulatory threat that may have been the most unnerving of all for some of the LCOs.

—Ron Hall

Kimm says administration wants more reduction in pesticide use

■ The lawn care operators didn't expect to find government officials asking them to use more chemical pesticides: they weren't disappointed.

"Many of us have long believed it is quite likely that pesticides are used more than they need to be used," said Victor J. Kimm, EPA Deputy Assistant Administrator, addressing 85 LCOs (from 24 states) and nine representatives of chemical product suppliers at the Professional Lawn Care Association of America's (PLCAA) Day on the Hill on February 7.

Kimm, in fact, said that the U.S. Environmental Protection Agency (EPA), the Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) met in June 1993 to begin mapping policies to:

1) encourage the growth of integrated pest management practices, and

2) promote, through licensing activities, replacement products that are just as effective as and "inherently safer" than classic hard chemicals.

"A good deal of attention is going into the general notion of trying to reduce the

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Circle No. 101 on Reader Inquiry Card

EPA's Kimm says lawn care industry needs better data concerning applicator and customer exposure—and quick.

presence of persistent toxic chemicals in society," he said. These efforts, mostly aimed at production agriculture, will increasingly include lawn care.

But Kimm's message to the LCOs was multi-pronged and included warnings of other approaching pesticide-related concerns.

For instance, he briefly touched on a National Academy of Science (NAS) study concerning the health implications of pesticide residues on children's diets. This particular five-year investigation, Kimm said, will likely grow into related studies dealing with the additive impact of other exposures to pesticides on children.

He urged the lawn care industry to initiate investigations of its own to determine and document homeowner, particularly children, exposures on treated lawns. "It's absolutely critical to get that work started quickly," Kimm said. A task force being readied by three trade associations and 17 product registrants may, in fact, already be moving in that direction, he reported.

Even within the EPA itself, reforms are being sought to better deal with pesticide issues, the most significant being a drive to replace the Delaney Clause (zero risk, zero tolerance for any chemicals that seem to cause cancer in man or animal) with a new standard based on "no reasonable certainty of harm"—as is the case in the Food, Drug and Cosmetic Act as it relates to other food additives.

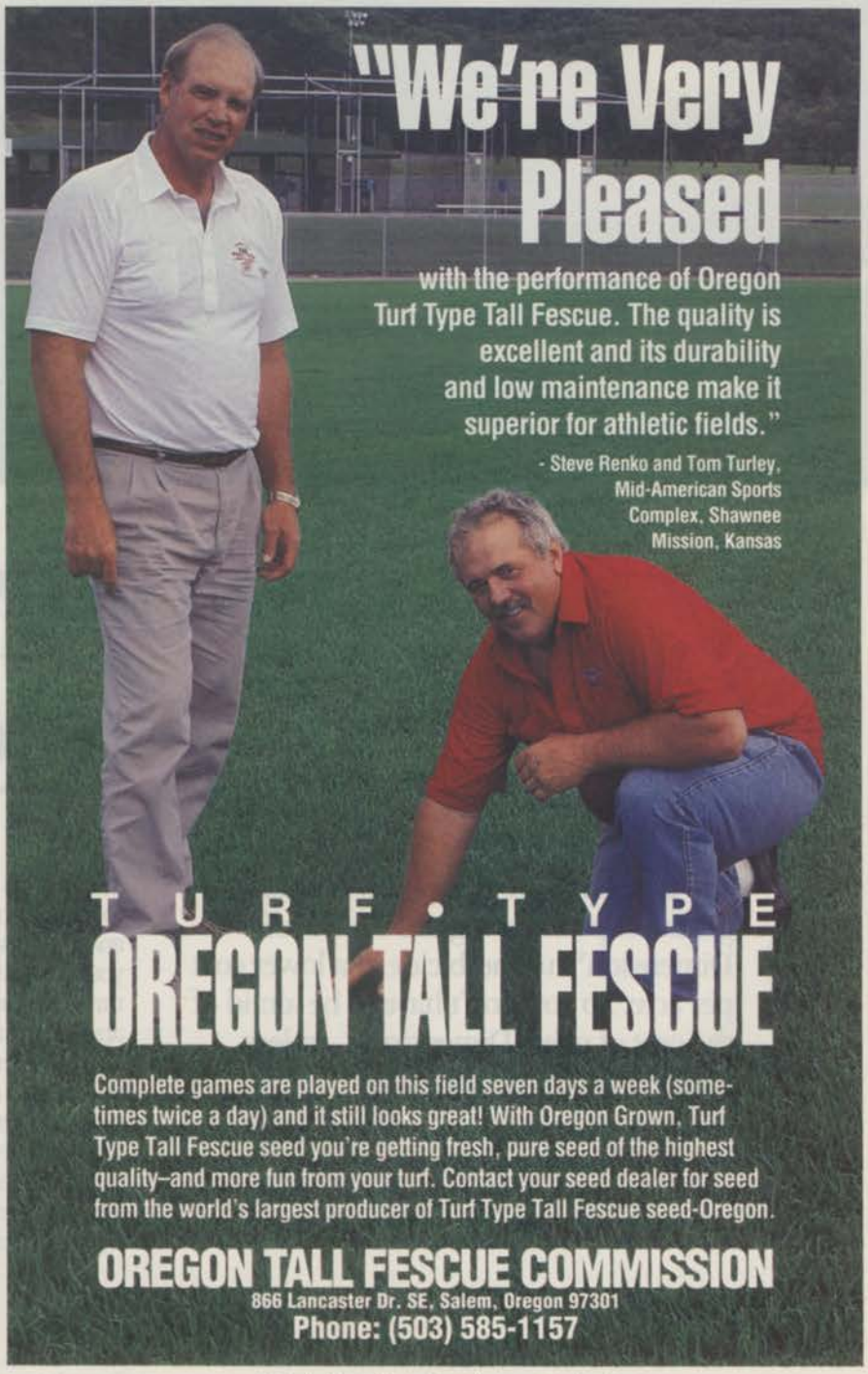
The EPA, Kimm said, is also looking for authority:

- to revise its pesticide cancellation/suspension process which, Kimm said, is "antiquated, takes forever, and doesn't work very well;"
- to institute "phase out or phase down" of a pesticide when concerns arise over its risk;
- to issue pesticide licenses that run out after 15 years so that re-registrations can be carried out on a more routine basis;
- to ask that all pesticide label changes become effective on one date each year.

Kimm said the timetable for these, and all, pesticide-related issues isn't clear-cut, an observation coming into clearer focus when Kimm admitted that the EPA's re-registration of pesticides, begun several years ago, won't even be near completion by century's end.

"I do believe that there will be significant debate about pesticide legislation beginning in the next couple of weeks," he predicted.

—Ron Hall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Circle No. 137 on Reader Inquiry Card

HOT TOPICS

Long-awaited mortality study released at golf show

GCSAA-commissioned research says incidences of death to superintendents by cancer are unusually high.

IOWA CITY, Ia.—A new study by the University of Iowa College of Medicine has found abnormally high deaths from cancer—particularly lung cancer—in golf course superintendents who died between 1970 and 1992.

However, Dr. Burton Kross, the study's chief investigator, tells superintendents that "the results of this study cannot and should not be used to draw any cause-and-effect relationships between your profession and cancer."

The study, yet to be submitted for peer review, was commissioned by the Golf Course Superintendents Association of America (GCSAA) to examine and correlate the death certificates of GCSAA members filed between 1970 and 1992. Preliminary results were obtained from 618 death certificates; when the study is completed, up to 750 former GCSAA members may be included.

"The relationships between pesticide exposures and human cancers are uncertain," Kross told an audience at the GCSAA's annual convention last month in Dallas. "However, evidence is building between specific pesticides and specific human cancers."

Kross said that the results were adjusted to reflect age at death compared to the total population. However, he also said that other factors such as lifestyle and family history—neither of which were studied—could "certainly" be contributing

GCSAA/Iowa State Epidemiology Study

Criteria: white males, former members of the GCSAA whose death certificates were filed between 1970 and 1992.

CAUSE OF DEATH	NO. IN STUDY	P.M.R.[1]	CONFIDENCE[2]
All cancers	**179**	**136**	**120-153**
Byccal	3	90	29-275
Esophagus	5	163	69-388
Stomach	4	78	30-206
Large intestine	**29**	**178**	**125-253**
Liver	1	62	9-437
Pancreas	9	130	68-248
Other digestive	3	161	52-494
Lung	**59**	**127**	**100-162**
Respiratory, non-lung	2	91	23-362
Bone and connecting tissue	3	297	97-909
Skin	2	78	20-307
Prostate	**15**	**229**	**140-375**
Bladder	3	70	23-217
Kidney	3	93	31-282
Brain	**7**	**242**	**120-488**
Non-Hodgkin's lymphoma	**9**	**211**	**113-395**
Leukemia	7	157	78-317

[1]**P.M.R.** = Proportionate Mortality Ratio, the number of observed deaths among superintendents divided by expected deaths from the general population multiplied by 100. (100 equals index for general population. More than 100 equals a more frequent incidence of the specific cause of death among superintendents; less than 100 equals a less frequent incidence.)

[2]**CONFIDENCE** level is 95% that actual P.M.R. is in this range.

Source: GCSAA, Iowa State University College of Medicine

ELSEWHERE

A word about our government, page 73

'Total Quality' never cheap, page 78

Monsanto sells turf herbicide, page 80

Clinton and the 103rd Congress, page 82

factors to the high cancer rates.

The study found a higher-than-usual number of deaths from lung cancer. Two other types of cancer, brain and non-Hodgkin's lymphoma, occurred more often in the group. Researchers also found that cancer of the large intestine and the prostate were more common in this group (see chart).

Kross: no 'cause-and-effect'

"We can now identify what merits further investigation," said GCSAA president Randy Nichols. "This was the first phase toward looking at the occupational hazards that affect our membership."

New GCSAA executive director Steve Mona says the study is "a baseline for future research."

"We also think this gives us an opportunity to forge new partnerships with groups that can help us," Mona adds. "For example, this is one more reason to work closely with chemical manufacturers in their efforts to develop new technology in products and packaging. Another example could be working with an organization like the American Cancer Society on the smoking issue."

Allen James, executive director of Responsible Industry for a Sound Environment (RISE), issued a statement in response to the study (see sidebar).

Kross, during his Dallas presentation, made three recommendations to the GCSAA:

1) Support programs to help employees stop smoking, and control exposure to secondary smoke by designating non-smoking areas for employees and patrons.

2) Minimize exposure to pesticides by carefully following pesticide application label directions and using protective clothing and equipment as much as possible.

3) Expand on the GCSAA's programs in pesticide application and training.

Nichols added another point:

4) "We need to work closely with chemical manufacturers in their efforts to develop new technology and new packaging."

Though the study was only 80 percent complete, Kross noted that he doesn't expect the final numbers to change drastically, and that releasing such preliminary results was not uncommon in the scientific community.

—Jerry Roche

RISE's response:

■ "We must caution everyone on the very preliminary nature of the study, and the fact that the researchers have not determined a cause-and-effect relationship for these results.

"While there is no proven link between health issues and practices used to control pests on our nation's golf courses, RISE members endorse research aimed at solutions for health concerns.

"We agree with the need for research. However, as Dr. Kross said, 'one cannot establish cause-and-effect relationship from this data.'

"RISE members believe it is important to note that today's products used for control of pests have undergone an average of 8 to 10 years of stringent health and safety tests before being considered for registration by the EPA. Such products are used safely when applied according to the labeled directions."

—Allen James

This LM reader sees a federal government that's out of control

■ To the editor:

My wife and I just returned from a week in Washington. We were there to do everything possible to help reduce the Federal Behemoth (aka federal "budget").

Our federal government is out of touch and out of control. It is unresponsive to reason, and its arrogant, regulatory overlords are contemptuous of those who would question their wisdom or motives.

The most recent manifestation of federal omniscience is the Clinton health care disaster. What Ira Magaziner and his minions have dreamed up is the antithesis of the American spirit.

The 100 businessmen in our group received a briefing from one of Ira's "health hacks." Any doubt I ever had about the intentions of the present administration were removed after this briefing. They intend to remove every vestige of entrepreneurial capitalism in this country, and they don't apologize for it.

There were three questions from the audience. The answers were scary.

1) "My mom just had a quadruple bypass operation. What would happen to her?"

The reply was: "This administration intends to eliminate the financial incentives for the surgeon to perform the work."

"Well, then how would my mom get the needed operation?"

"We believe the doctor would still want to perform the surgery because it would be professionally rewarding and intrinsically valuable for him to do that type of work."

At this, another man told his concerned friend, "Phil, he just said your mom's gonna die!"

2) "What happens to the part-time worker who moves from job to job?"

"You will pay for the time he works for you. While he is between jobs, the federal government will pay for him."

3) "Considering the Hubble telescope and other federal fiascos, why should we trust you with health care?"

"That's a good question," said the administration hack. "However, our plan...blah, blah, blah, blah..."

Thank goodness our forefathers understood that the best federal government is limited federal government.

Excessive regulation is choking business at all levels. Excessive taxes are choking the middle class. Excessive welfare is destroying generations of kids. Yet our pompous elected leaders continue to ignore their constituents.

What is the answer? I'm reminded of the words of the great American Socialist Patrick Henry, "Give me security, or give me death!" (Well, something like that.)

Wake up, people, and take responsibility for your personal lives. Get involved in your government. Your first instinct might be to say that it won't do any good because they won't listen. Well, they definitely won't listen if you don't call or write, that's for sure.

Write letters. Make visits. Invest your time, effort and money in changing your government.

Andie Hines
Shrub & Turf
Athens, Ga.

(ED. NOTE: Letters to the editor are welcomed. Mail your comments to: Editor, Landscape Management, 7500 Old Oak Blvd., Cleveland, OH 44130; or fax them to 216-891-2675.)

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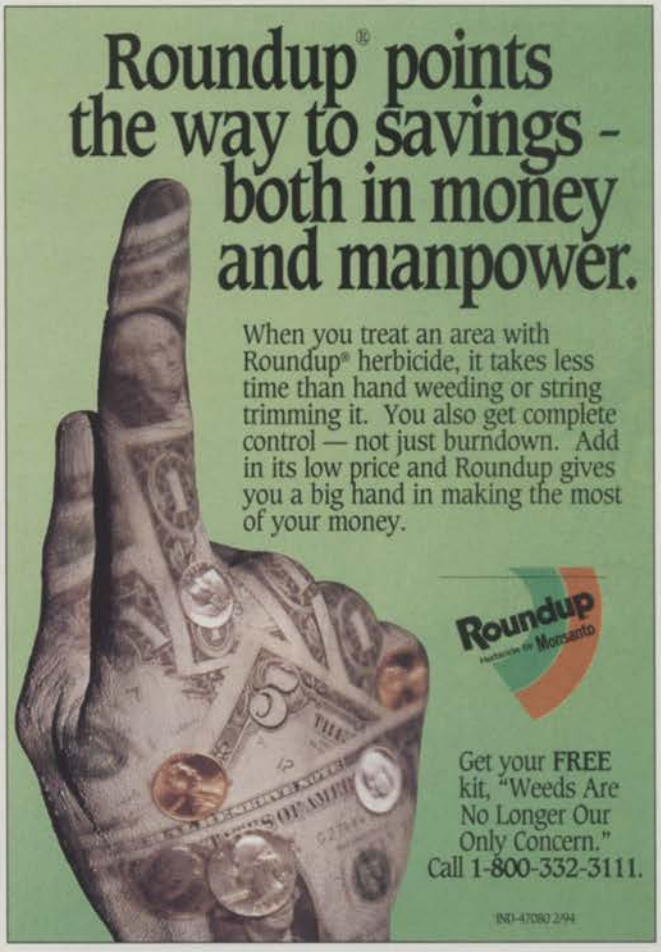
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Circle No. 103 on Reader Inquiry Card

Survey finds GIE Expo popular with owners

MARIETTA, Ga.— A survey of attendees taken during the 1993 Green Industry Expo in Baltimore last November found that a majority of the show's attendees were upper management personnel and business owners and presidents.

According to the survey, 67 percent of show attendees were upper management personnel, 45 percent were owners and presidents and 22 percent were managers and superintendents .

Ninety-two percent said they have a major role in decisions regarding equipment and service purchases. Fifty-seven percent said they have the final say in equipment buys.

Show attendees were surveyed during registration for the show, and the results were tabulated by Rob Brooks & Associates of Alexandria, Va. An average of 1,532 attendees responded to the show survey.

"The positive responses earned by GIE confirm that the show's position in the marketplace continues to gain strength and momentum," says George Gaumer, president of the Green Industry Expo.

GIE Expo is a joint trade exposition co-sponsored by the Associated Landscape Contractors of America, the Professional Grounds Management Society and the Professional Lawn Care Association of America.

Forty-six percent of companies in attendance at the show do an annual business volume of more than $500,000. More than 20 percent do an annual volume of more than $3 million.

"Survey results recognize GIE for its key role in bringing industry manufacturers together with the qualified professional consumer," says Eleanor Ellison, GIE trade show manager.

The show also features numerous seminars and workshops of interest to landscape contractors, professional grounds managers and lawn care operators.

The 1994 Expo and education conference is scheduled for St. Louis, Nov. 14-17. For more information, contact the show office at (404) 973-2019.

SERVICES PERFORMED BY GIE '93 ATTENDEES

Lawn/landscape management	67 percent
Chemical services	51 percent
Landscape installation	45 percent
Landscape design/build	28 percent
Irrigation service	23 percent
Tree services	11 percent
Garden centers/nurseries	9 percent
Government & institutions	6 percent
Other related services	17 percent

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Circle No. 118 on Reader Inquiry Card

Fruit fly battle won, control measures begin in Calif. town

CORONA, Calif.—Pesticide spraying to control the Mediterranean fruit fly has begun after a court victory by the Cooperative Medfly Project.

Control measures commenced the evening of Feb. 15, as three helicopters dumped a mixture of malathion and corn syrup bait over Corona and portions of nearby Norco for about four hours.

City officials were against the control measures, saying the spraying posed a risk to residents.

The state Supreme Court refused to hear an appeal of a lower court ruling that said the spraying could go on as earlier planned.

According to Larry Cooper, spokesman for the Medfly Project, a study by the University of California estimates damage to agricultural crops from unchecked fruit fly populations at $1 billion a year.

About 500 million sterile Medflies were to be released weekly in a 1,500-sq. mile area over parts of Los Angeles, and Orange and San Bernardino counties, as another means of controlling the fruit fly numbers.

Researcher not staying quiet about new earplug design

BLACKSBURG, Va.—A Virginia Tech engineer and graduate student have come up with a new earplug design that is a perfect fit for the human ear canal.

According to human factors engineer, John Casali, the custom-fitting earplugs use a foaming material within the ear canal of the wearer. The patented, custom-foam ear piece is designed to be inexpensive and easy to make.

Casali is the director of the Auditory Systems Laboratory, the only university teaching and research facility in the U.S. accredited for the evaluation of hearing protectors.

For more information about the earplugs, call (703) 231-5073.

Science tries to change how plants taste to pests

UNIVERSITY PARK, Pa.—Researchers in Penn State's College of Agricultural Sciences are looking for ways to make insects turn up their antenna at their favorite foods by altering the way plants taste.

"The chemical senses, taste and smell often are the key to insects' survival, says Dr. James Frazier, professor and head of Penn State's department of entomology.

Frazier and his colleagues have found naturally-occurring compounds that make plants taste terrible to pests, and now are studying how the compunds might be used in pest control.

"These chemicals could be sprayed on plants as today's pesticides are, but they would protect the crop simply by making it taste bad to the larvae," says Frazier, who also admits that man will never declare final victory in the war against pests.

"After thousands of years, we have yet to eradicate a single insect pest," Frazier says. "Insects eventually overcome everything science has thrown at them."

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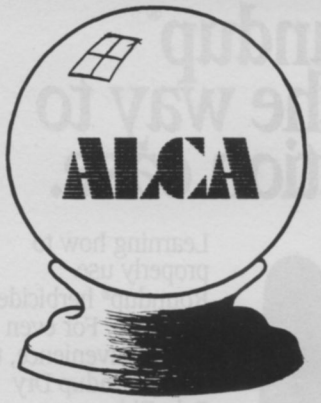
Circle No. 106 on Reader Inquiry Card

Total quality: never cheap, but possibly 'inexpensive,' landscaping panel says



RESTON, Va.—According to its Crystal Ball Report XV, the Associated Landscape Contractors Association (ALCA) believes that "many contractors make a profitable business serving the low-priced market," and that "something can be inexpensive and still be Total Quality."

The report, titled "Team Building and Measurement in the Landscape Industry," is a product of ALCA's Crystal Ball Committee, chaired by Tom Lied of Lied's Nursery, Sussex, Wis.

"We discussed the fact that not all successful landscape contractors...are as enthused about Total Quality Management as is the Crystal Ball Committee," Lied says. "In fact, TQM has recently received some bad press.

"The Crystal Ball Committee decided that TQM may be a contradiction. All we learned leads us to believe that *leadership* replaces *management* in a total quality company."

The report does admit, however, that the industry has really begun to sell the value of quality landscape service: "Attractiveness, timely response, thoughtful customer service at a fair price is what the customer is seeking. It has begun to show in many facets of our business."

The 78-page document also deals with employee empowerment, team building, and team tools and measurements. It concludes with recommendations.

"Employee empowerment...is not a simple task," the report states. "It requires that the owner, executive or manager *let go* of some of the reins. Total Quality takes the combined talents and resources of everyone in the company."

The report also recommends establishing self-directed work teams. "Unlike other committees or teams," it says, "a self-directed work team is actually an autonomous group working with minimal or no supervision. They can be put into an area of responsibility for sales, manufactured product, produced product, etc."

Finally, the committee says shared knowledge is a key to success. "Team members must know how they are doing," it suggests. "Share job experience, share customer satisfaction with team members, and foster a creative and positive attitude among team members," the blue-ribbon panel continues.

Copies of Crystal Ball Report XV, and the three previous reports dealing with Total Quality Management in the landscape industry, are available from ALCA for $7.50 each. To order, write ALCA, 12200 Sunrise Valley Dr., Suite 150, Reston, VA 22091; or phone (703) 620-6363.

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Garry Vitt (right) accepts a certificate of award from Curtis Clark, pendimethalin product manager at American Cyanamid.

Lawn Doctor owner receives $250,000 worth of herbicide

WAYNE, N.J.—Lawn Doctor owner Garry Vitt won't have to worry about fighting troublesome weeds for the next 10 years.

In one of the lawn care industry's largest product give-aways, Vitt was awarded a 10-year (up to $250,000) supply of pendimethalin, a pre-emergence herbicide. The prize will be supplied by American Cyanamid, O.M. Scott and Lesco.

"I've used pendimethalin for over eight years and look forward to relying on this product for at least another 10," Vitt says.

The presentation was made at the 1993 Green Industry Expo in Baltimore.

"This special give-away was an opportunity to reward one lucky lawn care company for its loyalty and commitment to the industry," says American Cyanamid product manager Curtis Clark.

Vitt owns Lawn Doctor franchises in Colorado Springs and Pueblo, Colo.

HOT STUFF

Dimension herbicide rights sold

PHILADELPHIA—Dimension herbicide (common name dithiopyr) will be sold to Rohm and Haas Co. by the Monsanto Co. The two principles signed a letter of intent for the transaction on Feb. 1.

Monsanto will support product sales and services until the sale, which is expected at mid-year.

Dimension is sold in the U.S., Canada, Japan and Australia for use on turfgrasses. It is designed to be used by golf course superintendents, lawn care operators and landscapers to control crabgrass and other problem weeds. It is available in liquid, clay granule and fertilizer formulations.

Monsanto will concentrate on control products for agricultural crops rather than turf, according to product director Jim Budsynski. "Monsanto's difficult decision to divest itself of this chemistry is based on the desire to focus on products that have technical fits in key agricultural crops such as corn, soybeans and wheat," Budzynski told LANDSCAPE MANAGEMENT at the golf course superintendents' conference in Dallas last month.

"This acquisition underscores our long-term commitment to the agricultural chemicals business," says Rohm and Haas president John Talucci. "These products, and related assets, are very compatible with our market presence and strength."

Financial terms of the agreement were not disclosed.

Emissions are 'negligible'

BALTIMORE—Air emissions from two-cycle lawn, garden and forestry products are "negligible," according to a report from the Portable Power Equipment Manufacturers Association.

The PPEMA found that volatile organic compounds (VOCs), carbon monoxide and nitrous oxide were "negligible when compared to all other sources of these air emissions. (Such) emissions from...chain saws, trimmers, brushcutters and blowers are not a major source of air pollution."

For instance, VOC emissions from portable lawn and garden products in the U.S. are only 0.8 percent of the total.

"It would take 439 years of emissions from a professional chain saw to equal one year of emissions from a passenger car," the PPEMA said.

The report was prepared by the consulting firm of Heiden & Associates. For details contact PPEMA at (301) 652-0774.

Preemption bills becoming more numerous

MADISON, Wisc. and ***DES MOINES, Iowa***—Preemption bills have gained impetus in two more states—Wisconsin and Iowa—during recent months.

The laws bar local governments from enacting their own pesticide regulations, forcing them to follow state mandates and making it easier for lawn and landscape companies to legally apply pesticides.

In Wisconsin, Gov. Tommy Thompson signed AB607 into law on Dec. 14, 1993.

"We won easily in the Assembly," notes Russ Weisensel of the Wisconsin Forestry, Rights-of-Way and Turf Coalition, "but we almost lost it in the Senate. Without agricultural interests, we probably wouldn't have had enough support."

The Wisconsin law actually allows local bills, but they must be sent to the state Department of Agriculture for review.

In Iowa, after passing by a wide margin in the state House of Representatives. Gov. Terry Branstad signed the bill into law on Feb. 8.

"We thought it would be a 15-vote margin going into the House vote," notes Steve Cook, director of association affairs for the Iowa Golf Course Superintendents Association. "But it wasn't even that close." In a 65-32 vote, the Iowa House agreed with the Senate's version of the bill despite heated debate.

"The vote went pretty much along party lines," Cook notes. "It was a very emotional debate from the Democratic side—dogs getting killed and so on—but one that pretty much fell on deaf ears."

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CLINTON AND THE 103rd CONGRESS

A report by Allen James, Responsible Industry for a Sound Environment

WASHINGTON—When Congress adjourned late last year, the 103rd session ended a stormy, but productive, first year in office for Pres. Bill Clinton.

The President was helped by his come-from-behind win on the North American Free Trade Agreement, which gave him a good finish despite a disastrous start.

In his dealings with Congress, Clinton did much better than it would appear. When he took a political stand on an issue, he prevailed 88.6 percent of the time, the highest for a president's first year since Dwight Eisenhower's in 1953.

Much of this harmony can be explained by the political changes resulting from the 1992 election. Democrats campaigned on the mantra of ending the Republican-Democrat gridlock, and they gave Pres. Clinton the traditional honeymoon period. On many issues, Clinton simply agreed with what Congress wanted to pass and took the credit.

On more difficult issues, Clinton was successful, but with a high cost to his image: hurt by the gays-in-the-military snafu, the loss of his economic stimulus package, and the amount of money spent for pork-barrel deals. (Clinton's let's-make-a-deal" style allowed members of Congress to obtain extraordinary political favors for votes, including dams, banks, aircraft carriers and presidential visits.)

Clinton alienated relations with Republicans on a number of issues by relying solely on Democrats to pass his tax-and-spend proposals, then shifting gears and depending mostly on Republicans to pass NAFTA, which angered many Democrats.

In order to govern effectively over the next three years, the President will have to build a coalition of moderate Republicans and Democrats, without constantly trading political favors and by developing a more cohesive domestic and foreign policy.

—Allen James is executive director of RISE, a group of pesticide manufacturers and distributors that supply the green industry.

Will electricity be 'the way to go' for golf course greensmowers?

LINCOLN, Neb.—You read it here first: the first all-electric triplex greensmower has been introduced to the golf course maintenance industry by Ransomes America.

The Ransomes E-Plex, unveiled at the Golf Course Superintendents Association of America trade show in Dallas last month, is designed for quiet, pollution-free operation.

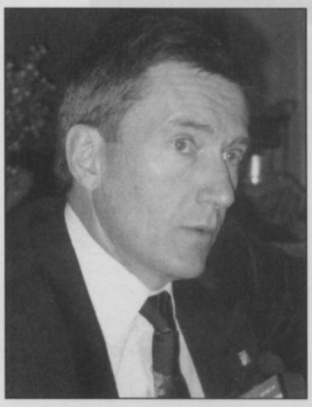
During a press breakfast held during the show, Ransomes vice president Doug McCormick called the E-Plex "a quantum leap" in the golf course equipment industry.

This development could signal a new era in environmentally-friendly outdoor power equipment design with electric power becoming a universal option.

Equipped with a 48-volt industrial electric motor, the E-Plex draws its energy from eight 6-volt, 244 AH golf cart-style batteries. It can operate up to three hours on a single charge. Maximum mowing speed is 3.7 mph while its top transport speed is 7.5 mph.

"In most cases," says Peter Wuhr, Ransomes product manager, "the mower can do 18 holes (on one charge)."

Wuhr says the batteries last from one to two years, depending on conditions and care. He adds that the cost of the batteries is paid for in 175 days from other savings.



McCormick: E-Plex is 'a quantum leap.'

Wuhr: Batteries charge in six hours.

The extra weight from the mower's batteries makes it 30 lbs. heavier than a fuel-powered model. The company says the trade-off is in fuel costs, noise reduction and elimination of fuel or oil leaks.

"Not only is this new mower environmentally friendly," says McCormick, "but the quiet motors allow crews to get on golf courses earlier in the morning. This is particularly important for courses that are part of private residential developments."

When asked by LANDSCAPE MANAGEMENT editors whether the green industry can expect to see an electric mower for fairways, too, in the near future, Wuhr said it was "always a possibility."

The total cutting width of the E-Plex is 62 inches.

Turf resource guide is being developed

ATHENS, Ga.—The Turfgrass Science Division of the Crop Science Society of America is compiling information for a "Turfgrass Management Teaching Resource Guide."

The guide will be helpful to those involved in turf education. The various resource materials to be included are videos, slide sets, computer software, computer services, books, periodicals and other teaching resources or aids such as irrigation components, plant and seed specimens, posters, etc.

If you know of any potential teaching aids that should be included, please send complete information to Dr. Keith J. Karnok, Dept. of Crop & Soil Sciences, Plant Science Building, University of Georgia, Athens, GA 30602; or phone him at (706) 542-0931.

Correction

■ To the editor:

I appreciate your reference to trends that I said may have some impact on golf course maintenance in the future, as noted in the January issue. I'd like to take credit for those insights, but—more accurately—my predecessor with GCSAA, Steve Cadenelli, had made those predictions back in 1991.

Of course, I am in complete agreement with Steve on those "future directions" and, indeed, we are already realizing all of them to some degree.

William R. Roberts
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INFO CENTER

Selected books and videos for the industry

EFFLUENT IRRIGATION..."Wastewater Reuse for Golf Course Irrigation" is available for $55 from Lewis Publishers, 2000 Corporate Blvd., NW, Boca Raton, FL 33431. It includes system design, monitoring concerns, retrofitting for recycled water and successful case studies. The book's editorial review committee included James Snow, Dr. Michael Kenna and Dr. Kimberly Erusha of the USGA Green Section, Mike Henry of the University of California and Dr. Charles Peacock of North Carolina State University. Pre-paid orders are postage-free. Visa, MasterCard and American Express orders are accepted. For more information or to order, phone (800) 272-7737.

THE THREE R'S..."Reduce, Reuse, Recycle" are the key elements of a 12-page booklet from the Rodale Institute Research Center and Troy-Bilt Manufacturing that answers questions homeowners most often ask about managing yard waste. Topics covered are clippings, the use of chipper/shredder/vaccuums, and bin and sheet composting. For a copy of "The 3-R Yard Care System," or for more information, write to Garden Way Inc., 102nd St. & 9th Ave., Troy, NY 12180.

BUSINESS MANAGEMENT... Noted author and lecturer Charles VanderKooi has written "Completing the Circle," which answers business problems. Topics included are estimating, field performance, employee motivation, administration and money management. According to VanderKooi, "this is a companion book to 'Estimating and Management Principles for Landscape Contractors." Copies are $39.00 each, plus $3 shipping and handling. Visas and MasterCards honored. To order, write VanderKooi & Associates, P.O. Box 621759, Littleton, CO 80162 or phone (303) 697-6467.

CHEMICALS IN THE SOIL... The American Society of Agronomy and the Crop Science Society of America have combined to produce SSSA Special Pub. No. 32 entitled "Sorption and Degradation of Pesticides and Organic Chemicals in Soil." The 260-page book is a technical look at the relationships between sorption and degradation of anthropogenic compounds in soils. It is available by sending $30 to SSSA/ASA, Book Order Dept., 677 S. Segoe Rd., Madison, WI 53711-1086.

PLANT QUARANTINES... The American Association of Nurserymen, in conjunction with the National Plant Board and USDA-APHIS, is marketing "Federal & State Quarantine Summaries," which contains clear, concise summaries of general shipping requirements and quarantines enforced by the USDA's Animal and Plant Health Inspection Service (APHIS). The binder also includes quarantine information for all 50 states and Puerto Rico. Send $20 (ANN members) or $25 (non-members) plus $2.50 shipping to: AAN, 1250 I St., NW, Suite 500, Washington, DC 20005. To order via Visa or MasterCard, phone (202) 789-2900.

ACROSS THE BOARD... Wiley Publishers has a wide range of technical publications available in subjects like plant pathology, weed science and pest management. To order a catalog, phone (800) 879-4539.

ORNAMENTAL PLANTS... The fourth edition of "Manual of Herbaceous Ornamental Plants" by Steven Still contains 384 color prints, twice as many as in the widely-used third edition. Price is $38.80 for the paper edition and $48.80 for the cloth. For more information, contact Stipes Publishing, P.O. Box 526, Champaign, IL 61824; (217) 356-8391.

ENERGY EFFICIENCY... Landscaping could save U.S. homeowners $10 billion a year, according to the U.S. Department of Energy. That point is brought home in "Energy-Efficient and Environmental Landscaping" from Appropriate Solutions Press. It gives landscape designs for the four major climate zones in the U.S. and detailed instructions on proper plant placement. Chapters are on water-efficient landscaping, landscaping for wildlife, landscaping with native plants. Cost is $19.95 postpaid. To order, write Appropriate Solutions, Dover Road Box 39, South Newfane, VT 05351 or phone (802) 248-7441.

GREEN INDUSTRY EVENTS

What's going on in the industry

MARCH

15-16: Tree Appraisal Workshop, Country Inn, Waukesha, Wis. Phone: (303) 466-2722.

18-20: ALCA Student Field Days, University of Tennessee, Knoxville. Phone: (703) 620-6363.

22: Turfgrass Equipment and Supplies Field Day, College of the Desert, Palm Desert, Calif. Phone: Mel Robey, (619) 346-6102.

22-23: Turfgrass, Landscape and Sports Turf Institute, Cal Poly, Pomona, Calif. Phone: Linda Knoche, (619) 723-0947.

24: Sports Turf Managers Association Midwest Chapter annual meeting, Schaumburg (Ill.) Golf Club. Phone: (708) 439-4727; (708) 360-4750.

25-26: Florida Certified Landscape Contractor Exam, Valencia Community College-West, Orlando. Phone: (407) 345-8137.

APRIL

10-14: American Landscape Showcase, Taipei, Taiwan. Phone: (407) 843-3487.

11-12: Southeastern Turfgrass Conference, Tifton, Ga. Phone: Waldene Barnhill, (912) 386-3353 or Brenda Poston, (404) 229-8125.

17-20: American Society of Golf Course Architects annual meeting, Pan Pacific Hotel, San Francisco. Phone: (312) 372-7090.

23-24: California Certified Landscape Technician Test, Pierce College, Woodland Hills, Calif. Phone: Kim Heckes, (616) 448-2522.

MAY

1-3: Menninger Sunbelt Tree Conference, Hotel Royal Plaza, Lake Buena Vista, Fla. Phone: (407) 345-8137.

18-20: Color Magic '94, Walt Disney World, Orlando, Fla. Phone: (407) 345-8137.

JUNE

5-7: Tree City USA National Conference, Lied Conference Center, Arbor Day Farm, Nebraska City, Neb. Phone: National Arbor Day Foundation, (402) 474-5655.

NOW YOU'RE 16½ FEET TALL.*

Trim hard to reach tree limbs or shrubs with the AGGRESSOR® from Echo—now equipped with a new high performance reciprocating blade that cuts up to twice as fast as the old blade.

The new, improved Echo Aggressor® Tree Trimmer has a 71-inch shaft that lets you trim limbs 4½ inches thick as high as 16½ feet up the tree—**from the ground!** It's powered by an Echo 21.2 cc engine with Pro-Fire® Electronic Ignition and purge pump-equipped carburetor for fast starts. And it weighs half as much as the competition, for easy handling.

See the Aggressor® and discover how fast and easy trimming can be when you're 16½ feet tall!

For the Echo dealer near you, call toll-free 1-800-432-ECHO (3246). Or write: Echo Incorporated, 400 Oakwood Road, Lake Zurich, IL 60047.

**No need for a ladder when you've got the Aggressor.® 2½ foot extension increases working height to 16½ feet.*

ECHO
Ask Any Pro!

Circle No. 116 on Reader Inquiry Card

Getting better weed control in your turf and ornamentals doesn't require the use of more herbicides. In fact, like most turf and landscape managers, you probably want to use less herbicide. Which is why you should use Gallery* herbicide.

The unique chemistry of Gallery can reduce the need for multiple applications of herbicide. Because Gallery is a preemergent herbicide, it stops the emergence of weed seedlings. So they never even break the surface of the soil.

In a single, low-rate application, Gallery can control the growth of 95 broadleaf weeds in ornamentals or turfgrasses for up to *eight months.* That means you can go all season long without worrying about whether spurge, oxalis, plantain or other weeds will show up to mar your landscapes and turf.

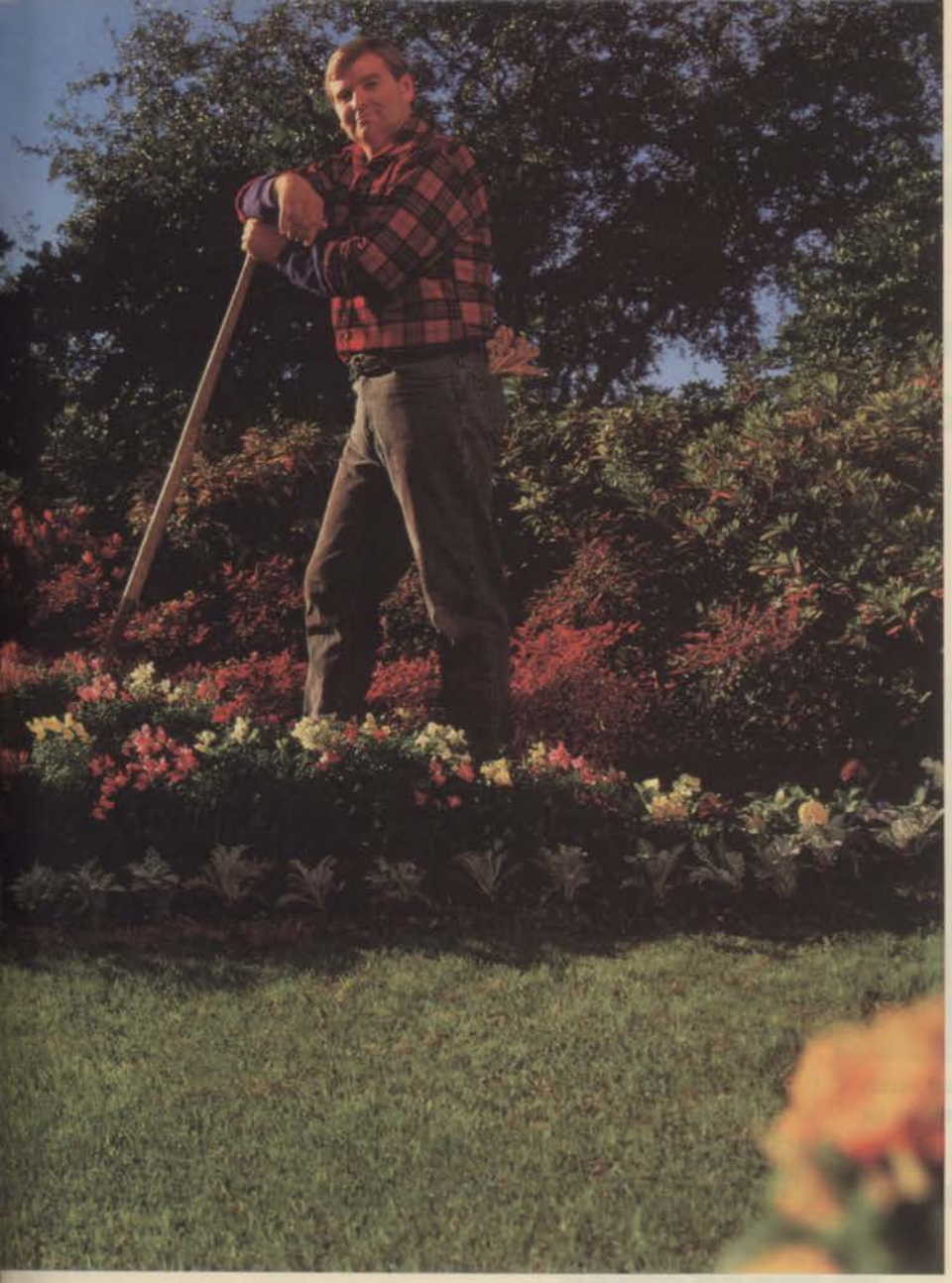
A Story Straight From Crooked Stick.

By switching to Gallery the superintendent at Crooked Stick Golf Club in Carmel, Indiana, reduced herbicide applications on his fairways from five a year to one. The very particular PGA officials who inspected those fairways for the 1991 PGA Championship raved about their outstanding condition.

Gallery. For th to do mor

Other herbicides would require five applications to deliver season-long control. Gallery delivers all season long with only one application.

Although Gallery is activated by water, it remains stable on the soil surface without rain for up to 30 days. It resists breaking down by sunlight, so you can be assured of maximum performance even under dry conditions. Gallery doesn't have any of the harsh effects of other



ose who want e with less.

long-residual herbicides. And there's minimal risk of off-target damage.

When you use Gallery along with Snapshot* and Surflan,* you can now get the long-term weed control you want in sensitive areas where ornamentals, shrubs, trees, perennial flowers or turfgrasses are growing. Snapshot controls both broadleaf and grassy weeds in ornamental beds for up to eight months. It is labeled for over-the-top application of woody ornamentals.

Of course, you've got more than broadleaf weeds to worry about. To prevent grasses that invade beddings, combine Gallery with Surflan herbicide to create the ideal long-term weed management program. Surflan is gentle on labeled established plants, as well. And when used according to label directions, it can be sprayed over the top of more than 200 different species of established ornamentals, trees, shrubs, ground covers and field-grown fruit trees.

Activated by water, Gallery creates a control area around weed seedlings.

Gallery shuts down the growth process for up to 8 months.

With Gallery, seedlings die before you ever see them.

Our 40-page book, The Nursery And Landscape Guide To Responsible Pest Control can fill you in on developing your own weed management strategy. It also contains useful information on controlling insects and turf diseases more effectively. For your free copy, return the coupon or call our toll-free number. And learn more about using less herbicide.

Send me the following Management Guide(s):
☐ Cool Turf
☐ Warm Turf
☐ Nursery and Landscape
Mail to: DowElanco, P.O. Box 33489, Indianapolis, IN 46203-0489.
Or call: *1-800-474-4534*

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Company _____

Business Category: ☐ Nursery ☐ Lawn Care ☐ Municipal ☐ Landscape Contractor ☐ Golf Course

Address _____

City _____ State ____ Zip _____

Phone ( ) _____

DowElanco

The chemistry is right.™

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GREEN INDUSTRY SHOWCASE

Riding equipment saves time on the golf course

"We average about 60,000 rounds a season at Dwan Golf Course," notes Arnie Bodhaine, superintendent of golf for the city of Bloomington, Minn. "Hyland Greens gets about 75,000 rounds each year."

Dwan is an 18-hole, par-68 course, Hyland Greens is two 9-hole, par-3 courses.

The high use rates keep Bodhaine's crews hopping. One thing that has proven to be a big time-saver was the addition two years ago of a Cushman Core Harvester attachment.

"It cuts our greens aeration time in half," Bodhaine says. "With our three Ryan Greensaire aerators, two Cushman Top Dressers and the Core Harvester, we can knock out all 18 greens in about 11 hours. We aerate, remove the plugs, top dress, fertilize, water in, and we're ready for golf again."

Bodhaine reduces tee aeration time by using a Ryan GA 30 riding aerator, which is also used on traffic areas and approaches, and a new Fifth Wheel Cushman GA 60 aerator for the bluegrass fairways.

Greens and tees are clipped with reel mowers, but Bodhaine now uses out-front rotary mowers more often in roughs.

"The Cushman Front Lines do a better job in the taller grass," he says. "With their maneuverability, rough mowing is easier and faster."

For Cushman and Ryan information, Circle No. 191 on Reader Inquiry Card

The Ryan GA 30 aerator saves time on tees, traffic areas and approaches. Non-coring tines speed up work in wet weather.

Roughs are mowed with Cushman out-front rotary mowers. They cut faster and better, according to superintendent Arnie Bodhaine.

PRODUCT REVIEW

Irrigation design software is more powerful, efficient

RainCad irrigation design software version 2.0 from Rain Bird now has more power and functionality with greater ease of use.

The new program increases re-drawing speed by 300 percent.

Keyboard interface has been substantially reduced and replaced with simple clicks of the "mouse" control.

Speed has been boosted, and enhanced keyboard interface cuts drawing time more than 30 percent over version 1.0, says Rain Bird.

The Version 2.0 now has cost estimating capability plus Material Take-off functions. It also allows the user to build customized Tied-Assemblies, resulting in a "fittings-level" material take-off.

Other enhancements include more automation of sprinkler head layouts, the addition of 300 more customizable symbols, 20 points of connection, 40 separate controllers, 3000 valves per drawing page and more irrigation equipment choices.

Circle No. 192 on Reader Inquiry Card

Surface spray aerator with interchangeable patterns

Otterbine's Concept2 series aerators feature four different interchangeable spray patterns: Sunburst; Phoenix2, which is a two-tiered pattern; Rocket2, a geyser-like pattern and High Volume2, a powerful aeration unit.

Otterbine spray aerators keep ponds and waterways naturally clear of foul odors, aquatic weeds and algae.

Rock covers and lighting packages are optional.

Motors are energy-efficient and built to last.

All systems are safety tested and approved as a package by ETL.

Circle No. 193 on Reader Inquiry Card

Engines built for variety in construction, turf industries

Kawasaki's FA engine series' side-valve design gives the engines a compact look.

The four engines in the line—the FA76D, FA130D, FA210D and FA210V—range in size from 76cc to 207cc, with output ranging from 1.7 to 5.2 hp.

continued on page 92

"WITH DACONIL 2787®, WE'VE HAD NO PROBLEM WITH LEAF SPOT."

Dave Southard, Superintendent, Bellevue Country Club Syracuse, New York

Spring comes late in central New York, and Dave Southard, course superintendent at the Bellevue Country Club in Syracuse, knows he can count on plenty of moisture and cool temperatures. "That means Leaf spot," Dave says. "Then we go right from Leaf spot to Dollar spot to Brown patch to Snow mold."

That's why, when the last snow melts in mid-April, Dave begins a season-long program of turf protection that centers on Daconil 2787® Flowable Fungicide from ISK Biotech Corporation.

Fairways, tees and greens

"I don't think we have more Leaf spot problems than other courses, but we do seem to have a longer time during which you have to control it," Dave explains. "We spray fairways, tees, and greens about every two weeks for a six- or seven-week period."

Bellevue Country Club is an 18-hole Donald Ross course, built in 1916. Much of its character comes from the course's rolling, woodsy terrain. In fact, the trees create some moisture problems on greens, tees and fairways.

"We're trying to thin out the trees a little, but we're really overplanted," Dave admits. "Many parts of the course are slow to dry out in the morning. Early or late in the year, when the sun is low in the sky, there are parts of the course that really don't get any sun at all. The trees cut down on air circulation, too. And that increases disease pressure."

"I always come back to Daconil."

You might say Daconil 2787 is the cornerstone of Dave's turf management program. While he sometimes uses other products, he always comes back to Daconil 2787 for dependable disease control, and to avoid resistance. As Dave puts it: "For 23 years, it's been one of the basic products I use. It's very cost-effective, and quite dependable."

Have you got a Daconil 2787 success story? Tell us about it. If we use your story in an ad, we'll donate $100 to your favorite charity. Write Jackie Tengler, ISK Biotech Success Stories, 5885 Landerbrook Dr., Suite 215, Cleveland, OH 44124.

Always follow label directions carefully when using turf and ornamentals plant protection products.

® Registered trademark of ISK Biotech Corporation.

DACONIL 2787 **The cornerstone of your turf management program.**

Circle No. 120 on Reader Inquiry Card

NO INTEREST FINANCING 'TIL APRIL 1

On all new John Deere Golf & Turf Equipment. Or, finance today at rates as low as 6.75% APR. An impressive lease package is also available. Offer expires April 30, 1994.

The only test left for

Paul Ellwood
Test Course Supt.
Phoenix, Arizona

"I'm very impressed to see a heavy-duty cutting unit that can follow ground contours as well as perform well on both bermuda and rye."

George Cook
Test Course Supt.
Bradenton, Florida

"We put over 580 hours on the unit and had very few problems. It's nice to know John Deere is interested in our input."

Lyman Hanley
Test Course Supt.
Tempe, Arizona

"We scalped for over-seeding last fall. I was amazed at how this machine went in and cut everything in one pass."

Mike Lentz
Project Manager
Horicon, Wisconsin

"We made a number of modifications based on what we learned in the field. The testing and feedback were critical to this project's success."

us to pass is yours

No one can accuse John Deere of rushing products to the marketplace–especially not the new 3215 and 3235 Turf System Mowers.

Three years and 8,000 hours of field testing have both proven and improved The System. It's mowed over 30 different golf courses on bentgrass, rye, bermuda, zoysia, and more.

In fact, there's nothing left for us to do except to give you our Golf & Turf Promise that you'll like what you see. For the name of your nearest distributor, or free literature, call 1-800-544-2122. Or write John Deere, Dept. 956, Moline, IL 61265. We've done our homework, now it's time for you to benefit from its results.

THE JOHN DEERE GOLF & TURF PROMISE

If for any reason you are not completely satisfied with your purchase, simply return it to your distributor within 30 days or the first 100 hours (whichever comes first) for a full refund.

JOHN DEERE

NOTHING RUNS LIKE A DEERE®

SAFETY Live with it

Circle No. 122 on Reader Inquiry Card

PRODUCTS *from page 88*

FA76D:

- moderately-priced four-cycle engine with 1.7 hp and horizontal power output shaft;
- recoil starter, splash lubrication, electronic ignition and mechanical governor;
- a low-oil shut-off system prevents engine damage.

FA130D:

- 3.1 hp, with a single-cylinder, four-stroke, air-cooled engine;
- horizontal shaft design, with recoil starter, splash type lubrication, electronic ignition and mechanical governor.

FA210D and FA210V:

- both are 207cc air-cooled, 5.2 hp engines;
- the FA210D has a horizontal power output shaft, the FA210V a vertical;

Kawasaki says these two are ideal for new equipment or as replacements.

Circle No. 194 on Reader Inquiry Card

Engine series features carburetor enhancement

Kohler Co.'s Command Pro Series of 11, 12.5 and 14 hp horizontal and vertical shaft engines are ideal power sources for commercial turf, construction and industrial equipment.

These engines feature Kohler's Smart-Choke system for one-pull starts.

Smart-Choke is a self-relieving choke carburetor that assures faster starts, smoooth acceleration and instant response to load variations, while eliminating over-choking.

A high-inertia flywheel also adds to quicker starts, smoother idling and provides greater rotational force for superior torque.

Kohler says further refinements of it's automatic compression release also means easy starting.

Kohler Command engines have hydraulic valve lifters, the only engine to do so, says the company.

This reduces valve train noice and eliminates the need for valve adjustment. A mechanical governor maintains contant RPM.

Circle No. 195 on Reader Inquiry Card

Spray system/trailer match saves you time and money

Rich Manufacturing of Indianapolis offers a new concept for the full-service lawn care company.

The R1600DX integrates a custom spray system onto a custom trailer to provide an all-in-one solution to increase productivity and lower overhead.

The combination gives you the power to apply chemical applications at the same time routine mowing is being performed.

The advantage of being able to apply weed and insect controls at all times also reduces costly service calls and adds to

With Formulating Plants located in Florida and Wisconsin KOOS • SHORE can fill all your needs:

1 Fertilizer Blends featuring Nutralene, sulfate of potash and minor elements.

2 Fertilizer Blends formulated with pesticides from an extended list of turf labels.

Plus...

3 Mini Size homogeneous fertilizer products for the golf course.

When your grass is on the line call:

KOOS SHORE

Midwest 1-800-558-5667

Southeast 1-800-329-2203

Circle No. 107 on Reader Inquiry Card

customer satisfaction.

Each tank can be operated independently so that different products can be carried at the same time, Rich Manufacturing notes.

The location of the spray tanks provides plenty of space for mowing equipment (up to 72-inch wide decks).

More storage is available in the front tray for trimmers, power blowers, gas cans or tools.

Circle No. 196 on Reader Inquiry Card

Improved efficacy claims for herbicides used with performance enhancer

Terra International, Inc. has added Riverside AMS Plus to its Riverside product line-up.

AMS Plus enhances herbicide, defoliant and desiccant performance by modifying factors such as pH and hard water.It is a liquid ammonium sulfate activator with phosphate ester of poly-glycolethers, a blend of ammonium salts, and formulation aids.

AMS is recommended for use with:

- Diquat,
- Endothal
- Gramoxone,
- MSMA
- Poast,
- Jury,
- Roundup, Roundup RT, and
- others requiring an ammonium sulfate activator.

Circle No. 197 on Reader Inquiry Card

Utility vehicle carries 1000 lbs., handles rough terrain

Haul Master's utility vehicle is powered by a 4-cycle, 16-hp Briggs & Stratton engine.

The UV has a 100-lb. load capacity and delivers the power needed for industrial jobs, landscape management, farm work and recreation.

The unit is good for transporting cargo or supplies, or reaching off-site locales.

The mult-purpose vehicle has a short turning radius, and maneuvers easily in tight spaces and narow areas.

Equipped with a heavy-duty trans-axle with full differential and differential lock, the Haul Master handles rough terrain while its heavy-duty housing seals out sand, dirt, salt water and other corrosives.

Its wide, low-pressure tires provide good traction and will not damage turf.

The vehicle seats two and hits a top speed of 20 mph.

Tilting dump box is more than 48 inches wide and 40 inches long.

Circle No. 199 on Reader Inquiry Card

Compact spray system for lawn work

The Dethmers Manufacturing Company of Boyden, Ia. makes a "Spray Team" for all lawn and garden spraying equiopment. Sprayers come in a variety of sizes; from five to 150 gallons.

Dethmers' ATV mounted sprayers come with or without spray booms, with a 14- to 85-gallons capacity.

The rear mounted sprayer can be used for larger jobs.

A large selection of application pumps is available.

Circle No. 198 on Reader Inquiry Card

Go anywhere, do anything with rugged utility vehicles

The Cushman Turf-Truckster is still rolling after 30 years in the green industry.

Standard features include:

- turf chassis with pin disconnect
- heavy-duty carbon steel channel fram boxed in critical areas;

Other optional and standard implements and attachments are available to the green industry professional to increase the versatility of the vehicle, such as top dressers, sprayers, Core Harvester, flatbed, short box and carrier set

The Turf Truckster is rated at 2,600 lbs., including payload, bed and driver.

Circle No. 200 on Reader Inquiry Card

This makes light hauling jobs easy

The G-11 Yamahauler is Yamaha Golf Cars' rugged utility vehicle designed to handle almost any light hauling job.

The company calls the Yamahauler G-11 one of the most versatile and reliable vehicles on the market.

The drop-side utility box permits almost immediate removal of both its sides and tailgate for flat-bed hauling.

The vehicle has a 4-by-4 foot bed, 13.4 cu. ft. of space and a 500-lb. capacity.

A frame mounted trailer hitch with a towing capacity of 150 lbs. is optional.

The Yamahauler is powered by a Yamaha 8.6 hp, four-stroke, overhead valve engine. Maintenance-free, transistor-controlled ignition ensures reliable operation. Bench seats raise to provide easy access to the engine.

Circle No. 201 on Reader Inquiry Card

These vehicles can't 'take it easy'

The Kawasaki Mule utility vehicles are well named. They refuse to quit when pushed to the limit.

The Mule 500, shown above right, is powered by a 286cc four-stroke gasoline engine.

The sturdy steel frame encloses a 36-by-44-inch cargo bed.

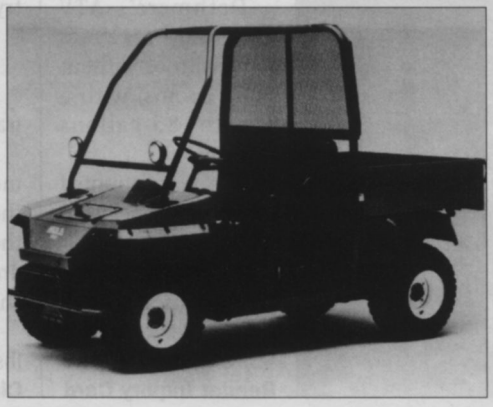
The Mule 500 has a 660-lb. vehicle load capacity. An additional 900-lb. towing capacity can be tapped when the Mule is equipped with an optional trailer hitch. The 500 has a continuously variable belt-driven automatic transmission.

Torque is transmitted through a pair of pulleys connected by a V-belt, which lessens the workload on the driver and maximizes the efficiency of the small-displacement engine.

The Mule 1000, below right, has a tilting cargo bed and a payload capacity of 1000 lbs.

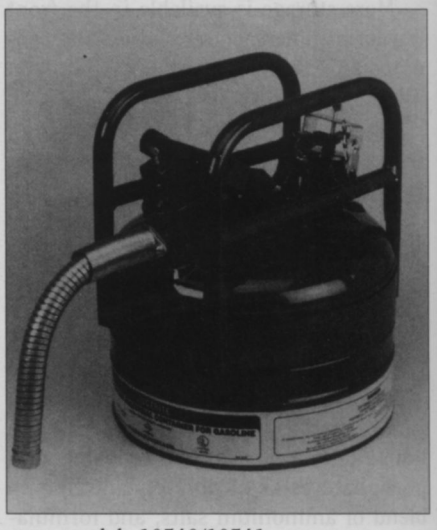
The 1000 is powered by a 454cc liquid-cooled, double overhead camshaft, eight-valve, four-stroke, counterbalanced, twin cylinder gas engine.

Circle No. 202 on Reader Inquiry Card



Safer fuel storage with newly-certified 5-gal. transporting container

Justrite Manufacturing Company, Des Plaines, Ill., announces its brand new, two-and-a-half gallon transport/dispensing



cans, models 10540/10541.

Testing of the new containers was completed in early November 1993, when the UN certification was granted.

UN approval for the containers means easier handling and more convenient dispensing than is possible when working with a heavier five gallon can.

Justrite believes the design meets the operating and spill-proof requirements needed when a container is being transported to a job, while offering the added protection of a Standard UL listed, FM approved safety can.

Circle No. 203 on Reader Inquiry Card

Utility vehicle has a 2000 lbs. capacity, 20 cu. ft.

Columbia ParCar's Utilitruck EU2000-XB is built for heavy duty material handling, landscaping, agriculture, lawn care, motels, airports and other utility uses.

The EU2000XB has more than 20 cu. ft. of cargo storage space with a payload capacity up to 2000 lbs. The narrow body design provides easy maneuverability in tight areas, and the rear axle is located directly under the payload area for added stability.

Circle No. 204 on Reader Inquiry Card

If you want to use a fungicide in a closed system, here's what you do. Get out your hose, fill your tank, throw in a new BAYLETON® turf and ornamental fungicide water soluble packet and you're ready to go.

You don't need to invest in a special metering and measuring device with lots of gizmos, whizbangs and doodads. Which means you don't have to learn how to operate it, or fix it, or find a place to put it.

Better yet, you don't have to invest in a year's worth of fungicide that comes with those special devices.

Like all closed systems, you reduce worker exposure and container disposal hassles. Best of all, you get the premium protection of the industry's leading fungicide. BAYLETON.

If you'd like more information, call us toll-free at 1-800-842-8020. Or if you'd like, write to us at Miles Inc., Specialty Products, Box 4913, Kansas City, MO 64120.

Pick up the new water soluble packets of BAYLETON. Then use all that money you didn't spend on a measuring and metering device for something more useful.

MILES

Always read and follow label directions. © 1994 Miles Inc. 94S10A0010

Circle No. 129 on Reader Inquiry Card

PRODUCT REVIEW

Lawn and garden series adapts to equipment lines

Put the versatility and maneuverability of your ATV to work by adding a Demco ATV Sprayer, custom-designed to fit Deere, Commuter, Avenger and other ATVs.

You get a 55-gallon polyethylene tank with molded in-sight gauge, and five-inch fillwell with baffle lid;

- anti-vortex outlet;
- single jet agitator
- in-line tank shutoff valve;
- in-line strainer;
- 3-hp Briggs & Stratton engine.
- 3-way boom control with pressure gauge;
- on-off agitation valve and on-off hand gun valve;
- built-in hose wrap-up
- adjustable boom height

Circle No. 205 on Reader Inquiry Card

Sprayer line holds up to 100 gallons

Ritchie Bestway Commercial markets a varied line of Tri-way sprayers.

The Tri-way can be fitted with a 30, 50 or 100-gallon sprayer tank, and it can be transported three ways.

The standard package includes a skid mount, or other options:

- a 3-pt. with a standard category one 3-pt;
- LaBarge Attachment Plus fork set;
- a trailer kit that can be installed in minutes.

Every Tri-way sprayer is constructed from heavy steel with a baked-on powder-coated finish.

There are also several attachments available, including 40-inch, 120-inch and 6mm booms, hose reel, swivel kit and handgun with adjustable tip and swivel.

Circle No. 206 on Reader Inquiry Card

Put a Front-Mount Millcreek Aerator on Your Commercial Mower.

Get more production and profitability from your John Deere, Ford, Kubota or Excel Hustler up-front mowers by attaching a front mount Millcreek core plug aerator.

Millcreek aerators have individually-mounted spoon wheels so you can make gentle turns without tearing turf. And our sturdy protective cage increases safety.

With so many styles and sizes, including 3-point hitch and tow-behind, choosing a Millcreek aerator is almost like designing one for yourself. All this and attractive pricing too. Call today for your free information.

- Fits Ford, John Deere, Kubota, Excel Hustler
- 42", 63", 84"
- 3-point hitch & tow-behind models
- Light-duty units also
- Individual spoon wheels
- Safety cage included

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Bird-in-Hand, PA 17505

Dealer inquiries invited.

Circle No. 108 on Reader Inquiry Card

Edging units install easily, eliminate trimming work

Innovative Concrete Design Corporation has introduced Select Edge Decorative Concrete Edging Units, an

attractive, economical, easy-to-install landscape edging system.

Natural scale, colors and attractive appearance combine to make this edging product a nice blend with any plan.

Circle No. 207 on Reader Inquiry Card

The Pacific Rim
Pest & Weed Control
Expo & Conference

PEST & WEED CONTROL EXPO '95

Singapore International Convention & Exhibition Centre

14-16 March 1995

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- **Largest** sales potential in the world is in Asia
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Skip pathology lab with portable meters

The pH and conductivity meters from ESD can enable turf managers to make on-the-spot turf diagnoses.

The pH meter, Model 57 is digital, and reads to the .1 pH unit.

The conductivity tester, Model 70DS, provides an analog, dual scale, with ranges from zero to 5,000 micromhos as well as zero to 3,500 ppm.

Both meters are guaranteed for two years. Electrodes are guaranteed for six months. The units include a meter, electrode, buffer solutions of 4, 7 and 10 for pH only, and a 9-volt battery, as well as instructions and solid carrying case.

Circle No. 208 on Reader Inquiry Card

Grass catcher holds up to four bushels of clippings

Grass Packer by Exalted fits virtually every commercial mower and holds up to four bushels of debris in its high-capacity, heavy duty plastic body that is dent resistant and water proof.

Grass Packer uses both an aerodynamically-designed entrance shoot and tapered cylindrical shape to enhance the air flow and ensure clog-free operation. In addition, Grass Packer has large built-in handles and an over-sized cover/hinge assembly for easy carrying and unloading.

The unit is available with a universal mounting bracket. It comes with a one-year warranty.

Circle No. 209 on Reader Inquiry Card

Power sweepers also offer thatch removal from turf

The Sweepster Power Sweepers not only remove thatch from turf in one pass, but also leaves, pine needles and thatch, Sweepster contends.

The machine can windrow thatch and debris into piles for easy pick-up with a sweeper that collects thatch in a hopper for dumping later.

Sweepster Power Sweepers have flexible polypropylene bristles. The gentle rotating action of a brush removes debris without damaging the root system. They bend as they pass over uneven surfaces, giving full bristle contact over uneven turf areas.

When used before overseeding, Sweepster notes, the Power Sweeper exposes soil to more sunlight, water and fertilizer. Sweeping turf areas opens the entire area the brush head comes in contact with.

Circle No. 210 on Reader Inquiry Card

Landscape and irrigation design offered for Windows

Green Thumb Software has a "Windows" version of its landscape design softward, LandDesigner Pro. The computer program enables professional landscape designers to produce comprehensive proposals with full-color plans, plant materials and lists, and detailed cost estimates.

Green Thumb's IrrigatorPro for Windows lets designers quickly produce high-quality irrigation designs, complete with detailed layouts and multiple reporting options.

Circle No. 211 on Reader Inquiry Card

The Bell Canada Enterprises Directory Publishing Group is Compiling

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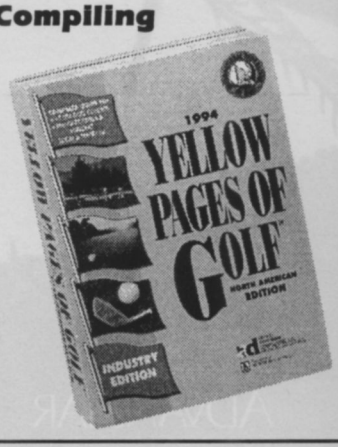


Circle No. 109 on Reader Inquiry Card

PRODUCT REVIEW

This primed seed has its own patented process

Whether your concerns are problem areas or getting a golf course into playable condition faster, RediSeed primed seed from Eco Soil Systems enhances seed performances in several ways.

The Solid Matrix Priming (SMP) process, which is patented, actually primes the seed to a point where they are ready to germinate, then "freezes" that condition for up to a year.

According to Eco Soil Systems, the difference between RediSeed and regular seed is that it begins sprouting hours after planting and watering.

Penncross, Pennlinks, SR1020 and Putter bentgrasses are available, along with Sabre *Poa trivialis*.

Circle No. 212 on Reader Inquiry Card

Finish mowers available in three different models

A new family of high-performance, durable flexwing turf finish mowers designed to meet the challenges of mowing large acreage has been introduced by Woods Equipment Co.

The Turf Batwing Finish Mowers are available in three models: 9144 with a 12-foot cutting swath, 9180 with a 15-foot swath and 9204 with a 17-foot swath.

Each Turf Batwing Finish Mower features three cutting decks with a cutting height ranging from 1.5 to 5 inches.

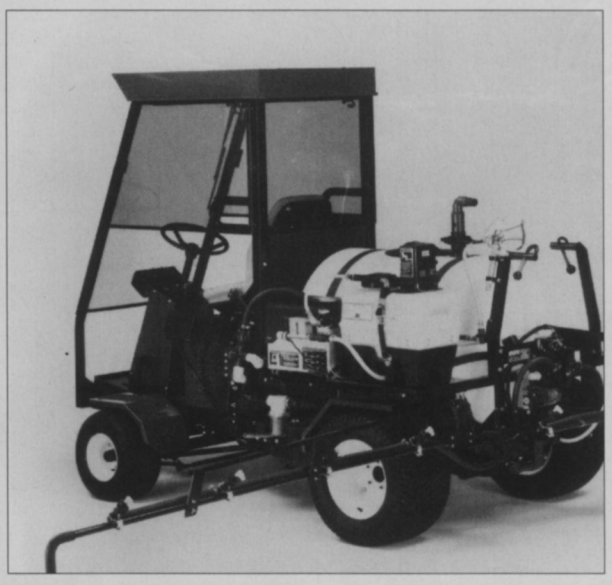
A positive stop, automatic wing lock-up function enables the operator to remain seated in the tractor while locking or releasing the wings from the transport position.

Circle No. 214 on Reader Inquiry Card

Injection system modifications complete, unit ready

The Toro Company has completed improvements to the InJector Pro Chemical Injection System for the Multi Pro 1100, and the vehicle is available for delivery.

The pesticide application system has gone through a year of significant changes since it was first released a year ago. In addition to calibrated, precision chemical application, the InJector Pro now includes a self-cleansing pressure-washing system for total chemical and rinsate clean-up.



"The exclusive design means the Injector Pro always mixes the exact amount of chemicals and adjusts to the chosen application rate," says Kent Hahn, executive vice president of Hahn, Inc.

Customers can choose from a dual-pumping or single-pumping InJector Pro model, depending on need. Both systems hold water and chemicals in separate tanks until moments before application. The console control then automatically monitors and controls the precise amount of chemical regardless of speed.

A self-cleansing washing system cleans injection tanks, and rinsate can then be dispensed onto the turf.

A cab air-flow system keeps possible drift from lingering in the cab.

Circle No. 213 on Reader Inquiry Card

Microscope/camera has many turf applications

RF Inter-Science has a new portable camera-adaptable microscope. This unit provides magnification of 45x and adapts to most 35mm single-lens reflex cameras by means of a simple camera adaptor called Macromate I.

The microscope weighs less than one pound. RF Inter-Science says it's excellent for field work where wide-field viewing and portability are factors like on-site insect identification.

No slide preparation is necessary. The specimen is simply placed on any flat surface, the Macroscope unit placed over it and focused.

Circle No. 215 on Reader Inquiry Card

Transpiration minimizer holds moisture in plant

Aquatrols introduces its new LeafShield anti-transpirant. When applied to foliage, LeafShield dries to a thin flexible waxy layer that holds moisture in the leaves and reduces transpiration stress when there is insufficuent moisture absorption by plant roots.

LeafShield is recommended when transplanting and transporting plants subject to moisture stress, and as a protectant against desiccating weather conditions.

It comes packaged in 4x1-gallon, 2.5x5-gallon and 5-gallon containers.

Circle No. 216 on Reader Inquiry Card

Athletic field absorbent cuts labor and storage

Rain Check athletic field absorbent absorbs 500 percent more water than clay, says its maker, Pioneer Manufacturing Co. It is also said to cut labor and storage costs up to 80 percent.

Manufactured of all organic materials, Rain Check is completely biodegradable. It goes to work the instant it's applied, and leaves no detectable residue to be cleaned up later.

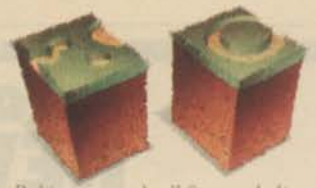
Rain Check can be applied easily, and spread evenly to cover up all wet areas. You allow it to stand for a few minutes, then rake until level.

Circle No. 217 on Reader Inquiry Card

We're talking about a control program that's very hard on fungus, yet very easy on your turfgrass.

Some things you can do to reduce turf stress, use less fungicide and still get an excellent level of control.

It starts with cultural practices. Like replanting disease-prone areas with resistant cultivars. Careful watering. Providing adequate fertilizer. And removing thatch. They'll make



Rubigan controls all five patch diseases, making diagnosis less critical.

Just imagine. A a stranglehold on fungu

DowElanco

your turf less susceptible to disease, which means you can use less fungicide to protect it.

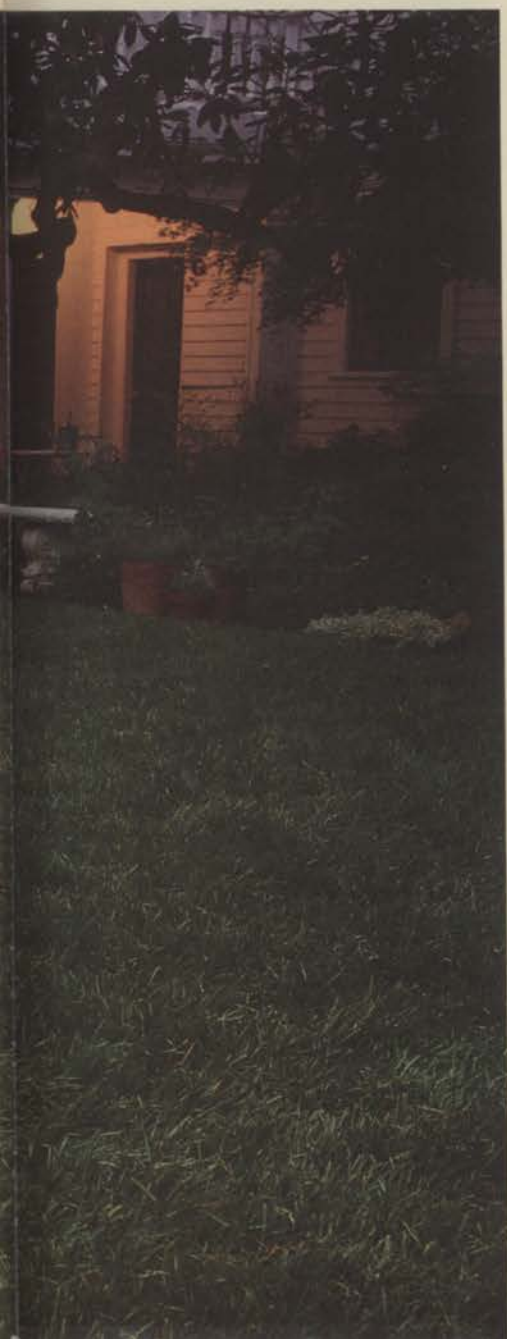
Knowing when to use a fungicide is important, too. By watching for conditions in which turf diseases thrive (weather patterns and soil temperature provide some very reliable signs), you can put down fungicide with perfect timing, and make fewer applications.

Fungus attacks plants from within. The results can be devastating.

And, of course, it helps to choose your fungicide carefully.

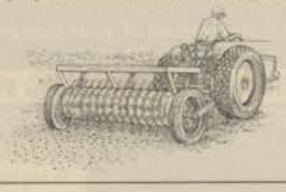
Responsible Pest Management. It also contains complete information on tactics you can use to control weeds and insects more responsibly. For a free copy, just return the coupon below, or call our toll-free telephone number. And learn some very nice alternatives to applying a lot of fungicide.

kinder, gentler way to get s.



A Short Course on Preventing Dollar Spot.

Leading universities recommend the following cultural practices to protect your turf from dollar spot. Eliminate excess thatch. Provide proper aeration. Increase nitrogen. Remove dew and water deeply and infrequently in the early morning (taking steps to keep your turf dry reduces the risk of dollar spot).



Rubigan lasts longer than most other fungicides, so you don't have to apply it as often.

Long-lasting Rubigan* fungicide is a very good choice. It controls 14 diseases, including dollar spot, necrotic ring spot, summer patch and brown patch. It's very easy on your turf. And it lasts longer than most other fungicides, which means you don't have to apply it as often.

Of course, there's a lot more to fungus control than what fits in this ad. You'll find it in our 44-page book, The Turf Manager's Guide to Responsible Pest Management. It also contains complete information on tactics you can use to control weeds and insects more responsibly. For a free copy, just return the coupon below, or call our toll-free telephone number. And learn some very nice alternatives to applying a lot of fungicide.

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- ☐ Warm Turf
- ☐ Nursery and Landscape

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Or call: *1-800-549-4554*

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03

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Send ad copy with payment to: **Bill Smith, LANDSCAPE MANAGEMENT,** 7500 Old Oak Blvd., Cleveland, Ohio 44130, or call **(800) 225-4569 ext. 670** outside Ohio; (216) 891-2670 inside Ohio; FAX (216) 826-2865. VISA, MASTERCARD and AMERICAN EXPRESS accepted.

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FOR SALE

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EQUIPMENT FOR SALE

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HELP WANTED

LANDSCAPE MAINTENANCE MANAGERS: Well established major landscape firm needs experienced, quality minded professionals for northern California operations. Challenge and opportunity await high achieving, self motivated individuals. EOE. Send resume to: Cagwin & Dorward Landscape Contractors, P.O. Box 1600, Novato, CA 94948-1600. 3/94

SERVICE MANAGER: Quality, growth oriented company servicing Central MA and Southern NH. Self starter with good communication and management skills desired. Work involves fertilizer and pesticide delivery, slice seeding and aerating. Excellent salary, bonus, benefits. Forward resume to Lawn•Doctor of Nashoba Valley, Box 2129, Acton, MA 01720, 800-742-4468. 3/94

Searching for the right employee? Time for a new position? Contact **Florapersonnel, Inc.,** international search and placement firm for the landscape, irrigation industries and allied trades. **Confidential. Fee paid by employer.** Florapersonnel, Inc., 2180 W. 434, Suite 6152, Longwood, FL 32779-5008. Phone: (407)682-5151 Fax: (407)682-2318. TF

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IPM Supervisor: Excellent opportunity at 300 acre botanic garden for experienced person in IPM with supervisory background. B.S. required. Send resume to Human Resources, Chicago Botanic Garden, P.O. Box 400, Glenco, IL 60022-0400. 3/94

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104	121	138	155	172	189	206	223	240	257	274	291	308	325
105	122	139	156	173	190	207	224	241	258	275	292	309	326
106	123	140	157	174	191	208	225	242	259	276	293	310	327
107	124	141	158	175	192	209	226	243	260	277	294	311	328
108	125	142	159	176	193	210	227	244	261	278	295	312	329
109	126	143	160	177	194	211	228	245	262	279	296	313	330
110	127	144	161	178	195	212	229	246	263	280	297	314	331
111	128	145	162	179	196	213	230	247	264	281	298	315	332
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113	130	147	164	181	198	215	232	249	266	283	300	317	334
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115	132	149	166	183	200	217	234	251	268	285	302	319	336
116	133	150	167	184	201	218	235	252	269	286	303	320	337
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07 ☐ 0110 Lawn care service companies
08 ☐ 0112 Custom chemical applicators
09 ☐ 0135 Extension agents/consultants for horticulture
10 ☐ Other contractor or service (please specify) _____

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12 ☐ Other supplier (specify) _____

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